

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF MARYLAND
NORTHERN DIVISION**

METROPCS WIRELESS, INC.,)	
)	
Plaintiff,)	
)	
v.)	Civil Action No. 1:09-CV-00601-WDQ
)	
TELECOMMUNICATION SYSTEMS,)	
INC.,)	
)	
Defendant.)	

EXHIBIT 1 PART 1 OF 2

PLAINTIFF METROPCS WIRELESS, INC.'S MEMORANDUM IN OPPOSITION TO
DEFENDANT'S MOTION TO DISMISS OR, IN THE ALTERNATIVE, TO COMPEL
ARBITRATION, OR, IN THE ALTERNATIVE, TO STAY

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF MARYLAND
NORTHERN DIVISION**

METROPCS WIRELESS, INC.
2250 Lakeside Boulevard
Richardson, Texas 75082,

Plaintiff,

v.

**TELECOMMUNICATION SYSTEMS,
INC.**
275 West Street, Suite 400
Annapolis, Maryland 21401
Anne Arundel County,

Defendant.

Civil Action No. _____

ORIGINAL COMPLAINT

Plaintiff MetroPCS Wireless, Inc. ("*MetroPCS*" or "*Plaintiff*") files this Original Complaint against Defendant TeleCommunication Systems, Inc. ("*TCS*" or "*Defendant*") and, in support thereof, respectfully alleges as follows:

**I.
PARTIES**

1. MetroPCS Wireless, Inc. is a Delaware corporation with its principal place of business at 2250 Lakeside Boulevard, Richardson, Texas 75082.

2. TeleCommunication Systems, Inc. is a Maryland corporation with its principal place of business at 275 West Street, Suite 400, Annapolis, Maryland 21401. TCS may be served with process by serving its registered agent, CSC – Lawyers Incorporating Service Company, 7 St. Paul Street, Suite 1660, Baltimore, Maryland 21202.

II.
JURISDICTION AND VENUE

3. This Court has subject matter jurisdiction over this action pursuant to 28 U.S.C. § 1332 because there is complete diversity of citizenship between the parties and the amount in controversy, exclusive of interest and costs, exceeds \$75,000.

4. Venue lies in this jurisdiction pursuant to an agreement between parties as evidenced by the terms of the Network Services Agreement, dated November 12, 2007 (“*Agreement*”), which forms the basis of this action.¹ Venue is also proper in this jurisdiction pursuant to 28 U.S.C. § 1391(a) because Defendant’s principal place of business is located in this District.

III.
SUMMARY OF DISPUTE

5. MetroPCS’ claims arise out of TCS’ failure to defend, indemnify and hold harmless MetroPCS from Civil Action No. 2:08cv381, styled *EMSAT Advanced Geo-Location Technology, LLC et al. v. MetroPCS Communications, Inc. and MetroPCS Wireless, Inc. et al.*, which is currently pending in the United States District Court for the Eastern District of Texas—Marshall Division (the “*Federal Court Action*”).² In November 2007, MetroPCS contracted with TCS for the use of its location-based service (“*LBS*”) technology and services. Under the parties’ agreement, MetroPCS assumed no liability for intellectual property claims (“*IP Claims*”) resulting from its use of TCS’ LBS technology and services, and TCS agreed to defend,

¹ A true and correct copy of the Agreement is attached hereto as Exhibit A.

² A true and correct copy of the complaint filed in the Federal Court Action (“*Complaint*”) is attached hereto as Exhibit B.

indemnify and hold harmless MetroPCS from such claims. *See* Section 7.4 (IP Claims) of the Agreement.

6. MetroPCS was sued in the Federal Court Action by EMSAT Advanced Geo-Location Technology, LLC (“*EMSAT*”) and Location Based Services, LLC (collectively, the “*Federal Plaintiffs*”) on October 7, 2008. The Federal Plaintiffs’ core allegation in the Federal Court Action is that MetroPCS infringes Federal Plaintiffs’ patents through MetroPCS’ use of LBS service and technology provided by TCS - - the exact TCS technology and services that MetroPCS contracted with TCS to use under the Agreement, and the exact IP Claims for which TCS agreed to defend, indemnify and hold harmless MetroPCS. Upon receipt, MetroPCS promptly notified TCS of the Federal Court Action and the allegations contained therein and demanded that pursuant to Section 7.4 (IP Claims) of the Agreement TCS defend, indemnify and hold harmless MetroPCS from the Federal Court Action. TCS has refused to fulfill its obligations under the Agreement. MetroPCS now files this suit seeking a declaratory judgment that TCS under the Agreement has an obligation to defend, indemnify and hold harmless MetroPCS against the Federal Court Action, specific performance by TCS of these obligations, damages for TCS’ breach of the Agreement, and payment of any royalties or damages arising out of the Federal Court Action.

IV. STATEMENT OF FACTS

A. Location-Based Services

7. LBS is a new and innovative information and entertainment service commonly offered by wireless providers to their customers. LBS allows mobile users to know their specific

location and to provide them with personalized applications and services tailored to their current location.

8. LBS technology utilizes the geographic positioning of a mobile device to identify the location of the user and, based on this information, provides access to a multitude of information regarding persons and objects in that area. For example, with increasing popularity LBS technology is used by wireless customers to locate food, lodging and entertainment in the area, access information about current traffic conditions and alternate routing, and locate friends and family.

B. The Relationship Between MetroPCS and TCS

9. MetroPCS is a wireless provider. As of December 31, 2008, MetroPCS has approximately 5.4 million customers in major metropolitan areas across the United States. Among the many services MetroPCS offers to its network customers is applications which use LBS. MetroPCS contracted with TCS to provide the necessary technology and TCS equipment to allow MetroPCS to provide LBS service to its customers.

10. On November 12, 2007, MetroPCS and TCS entered into the Agreement. Section 1 (Relationship of the Parties) of the Agreement defines the relationship between MetroPCS and TCS. Section 1.1 (Appointment) states: “[MetroPCS] will make use of and deploy TCS technical solutions and services (“the TCS Hosted Xypoint® Location Based Service” or “Hosted XLS Service”) throughout its markets.” Section 7.4 (IP Claims) of the Agreement provides that TCS will:

IP Claims. Subject to [MetroPCS’] compliance with the terms of this Section 7.4 and Sections 7.5 and 7.6, TCS *shall defend, indemnify and hold harmless* [MetroPCS] and its officers and directors (each, an “**Indemnified Party**” and, collectively, the

“Indemnified Parties”) from and against any loss, damage, or liability, including reasonable costs and attorney fees, *to the extent that such loss, damage or liability arises out of any third-party claim, suit, or allegation that [MetroPCS’] use of any product or service provided by TCS under this Agreement or any claim under Sections 7.2 or 7.3 infringes the patent*, trademark, copyright rights, trade secret rights of [sic] other proprietary rights of such third party (collectively the **“IP Claim”**). . . . (Emphasis added).³

MetroPCS uses TCS’ technology and services to provide LBS to its customers.

C. The Federal Court Action

11. On October 7, 2008, Federal Plaintiffs filed the Federal Court Action against MetroPCS. In the Federal Court Action, Federal Plaintiffs allege that EMSAT is the assignee and owner of all rights, title and interest in, and Location Based Services, LLC is the exclusive licensee of the following patents: U.S. Patent No. 5,946,611 (*“’611 Patent”*) issued for “Cellular Telephone System That Uses Position of a Mobile Unit to Make Call Management Decisions”; U.S. Patent No. 6,847,822 (*“’822 Patent”*) issued for “Cellular Telephone System That Uses Position of a Mobile Unit to Make Call Management Decisions”; U.S. Patent No. 7,289,763 (*“’763 Patent”*) issued for “Cellular Telephone System That Uses Position of a Mobile Unit to Make Call Management Decisions”; and U.S. Patent Application Pub. No. US 2008/0014965 A1 (*“the ’965 Publication”*) entitled “Cellular Telephone System That Uses Position of a Mobile Unit to Make Call Management Decisions” (collectively the *“Patents”*).⁴

12. Federal Plaintiffs’ core allegation in the Federal Court Action is that MetroPCS’ “offer for sale, sale, use, and/or inducement of the use, offer for sale, and sale” of mobile E911

³ Agreement, Section 7.4 (IP Claims) at p. 5.

⁴ Complaint at pp. 4, 7-8.

services and commercial location based services infringes Federal Plaintiffs' patent rights.⁵ More simply stated, Federal Plaintiffs' Federal Court Action is a third-party suit alleging that MetroPCS' use of the LBS technology and services provided to MetroPCS by TCS under the Agreement infringes the Patents. Although MetroPCS denies that it infringes Federal Plaintiffs' Patents, nonetheless MetroPCS is required to defend against the Federal Court Action.

D. TCS' Duty to Defend, Indemnify and Hold Harmless MetroPCS Under the Agreement

13. Fundamental to the Agreement is MetroPCS' use of TCS' LBS service and technology. Without the LBS provided by TCS, MetroPCS would need to contract with a third party for such LBS technology or buy and license such technology from third parties and install and operate it itself. Since MetroPCS procures its LBS service and technology from TCS, MetroPCS relies on TCS to ensure that TCS' service and technology is free from IP Claims and that MetroPCS' use of such services and technology comports with federal, state and local laws. MetroPCS expressly disclaimed any assumption of such liability for IP Claims in entering into the Agreement and bargained for an indemnity and defense agreement from TCS related to TCS' LBS service and technology. Section 7.4 (IP Claims) of the Agreement provides as follows:

IP Claims. Subject to [MetroPCS'] compliance with the terms of this Section 7.4 and Sections 7.5 and 7.6, TCS *shall defend, indemnify and hold harmless* [MetroPCS] and its officers and directors (each, an "**Indemnified Party**" and, collectively, the "**Indemnified Parties**") from and against any loss, damage, or liability, including reasonable costs and attorney fees, *to the extent that such loss, damage or liability arises out of any third-party claim, suit, or allegation that [MetroPCS'] use of any product or service provided by TCS under this Agreement or any claim under Sections 7.2 or 7.3 infringes the patent, trademark, copyright rights, trade secret rights of [sic] other proprietary rights*

⁵ *Id.* at pp. 6-8.

of such third party (collectively the “**IP Claim**”). . . . (Emphasis added).⁶

14. Federal Plaintiffs’ Federal Court Action is an “IP Claim” as defined under Section 7.4 (IP Claims) of the Agreement. Federal Plaintiffs’ patent infringement allegations arise out of MetroPCS’ “use” of TCS’ LBS technology and services—the precise matters MetroPCS contracted for under the Agreement.

15. On October 21, 2008, MetroPCS sent TCS a notice informing TCS of the Federal Court Action, Federal Plaintiffs’ allegations that the LBS service offered by MetroPCS infringes the Patents, and demanding that TCS defend, indemnify and hold harmless MetroPCS in accordance with the Agreement.⁷ In doing so, MetroPCS fully complied with its obligation under Section 7.5 (Indemnity Procedure) of the Agreement to provide TCS with “prompt written notice of any IP Claim or other claim under Sections 7.2 or 7.3 for which it seeks indemnification hereunder.”⁸

16. On November 5, 2008, TCS responded to MetroPCS acknowledging the allegations made in the Federal Court Action, but disclaiming any obligation to defend, indemnify and hold harmless MetroPCS.⁹

17. Consequently, TCS has failed to meet its contractual obligations under the Agreement, and MetroPCS now files this suit requesting a declaratory judgment that TCS has an obligation to defend, indemnify and hold harmless MetroPCS in the Federal Court Action, an order that TCS specifically perform that obligation, compensation for any damages caused by

⁶ Agreement, Section 7.4 (IP Claims) at p. 5.

⁷ October 21, 2008 letter from J. Christopher Luna, Staff Vice President and Assistant General Counsel for MetroPCS, to Mark D. Johnson at TCS, a true and correct copy of which is attached hereto as Exhibit C.

⁸ Agreement, Section 7.5 (Indemnity Procedure) at p. 5.

⁹ November 5, 2008 letter from Bruce A. White, representative of TCS, to J. Christopher Luna, a true and correct copy of which is attached hereto as Exhibit D.

TCS' breach of the Agreement, and payment of any royalties or damages arising out of the Federal Court Action. If TCS fails to comply with its obligations, MetroPCS will be harmed because MetroPCS will be required to retain counsel, spend money to defend against the Federal Court Action, and divert important management attention and other resources to the Federal Court Action, for which money damages would not be sufficient.

**V.
CAUSES OF ACTION**

A. *Declaratory Judgment for TCS' Duty to Defend, Indemnify and Hold Harmless MetroPCS from the Federal Court Action*

18. MetroPCS re-alleges and incorporates paragraphs 1 through 17 above as if fully set forth herein in support of its declaratory judgment cause of action.

19. Under the Agreement, MetroPCS contracted with TCS for the use of TCS' LBS service and technology. Under Section 7.4 (IP Claims) of the Agreement, TCS expressly agreed to defend, indemnify and hold harmless MetroPCS from any third-party claims, allegations, and suits for patent infringement arising out of MetroPCS' use of TCS' LBS service and technology, which would include Federal Plaintiffs' allegations that TCS' LBS service and technology infringes the Patents.

20. Federal Plaintiffs filed the Federal Court Action alleging MetroPCS infringes the Patents by its use of TCS' LBS service and technology. MetroPCS promptly notified TCS of the Federal Court Action, the Federal Plaintiffs' allegations, and demanded that TCS defend, indemnify and hold harmless MetroPCS from the claims, allegation and damages alleged in the Federal Court Action. Therefore, MetroPCS has fulfilled its obligations under the Agreement

and a declaratory judgment that TCS has an obligation to defend, indemnify and hold harmless MetroPCS from the Federal Court Action should be entered.

B. Specific Performance of TCS' Obligation to Defend, Indemnify and Hold Harmless MetroPCS from the Federal Court Action

21. MetroPCS re-alleges and incorporates paragraphs 1 through 20 above as if fully set forth herein in support of its specific performance cause of action.

22. Under the Agreement, MetroPCS contracted with TCS for the use of TCS' LBS service and technology. Under Section 7.4 (IP Claims) of the Agreement TCS expressly agreed to defend, indemnify and hold harmless MetroPCS from any third-party claims, allegations or suits for patent infringement arising out of MetroPCS' use of TCS' LBS service and technology, which would include Federal Plaintiffs' allegations that TCS' LBS service and technology infringes the Patents.

23. Federal Plaintiffs filed the Federal Court Action alleging MetroPCS infringes the Patents by its use of the TCS' LBS service and technology. MetroPCS promptly notified TCS of the Federal Court Action and demanded that TCS defend, indemnify and hold harmless MetroPCS from the Federal Court Action. Therefore, MetroPCS has fulfilled its obligations under the Agreement and TCS should be ordered to defend, indemnify and hold harmless MetroPCS from the Federal Court Action.

C. Breach of the Agreement by TCS

24. MetroPCS re-alleges and incorporates paragraphs 1 through 23 above as if fully set forth herein in support of its breach of contract cause of action.

25. TCS is in breach of the Agreement. Despite demand, TCS has failed and refused to defend, indemnify, hold harmless and otherwise dispose of the IP Claims made the subject of the Federal Court Action.

26. MetroPCS has fulfilled all obligations under the Agreement. TCS remains in breach, however, and should be found in breach of the Agreement. Consequently, MetroPCS requests an award of all damages, attorneys' fees and costs flowing, directly or indirectly, from the breach of the Agreement by TCS.

D. Common-Law Indemnification

27. MetroPCS re-alleges and incorporates paragraphs 1 through 26 above as if fully set forth herein in support of its common-law indemnification cause of action.

28. The Federal Plaintiffs sued MetroPCS for patent infringement allegedly resulting from MetroPCS' use and sale of LBS technology and services. The sole means by which MetroPCS provides LBS services to its customers is through the use of TCS' LBS technology and services purchased under the Agreement. MetroPCS relies solely on TCS to provide TCS' LBS technology and services free from patent infringement claims.

29. Should MetroPCS be found liable to the Federal Plaintiffs for patent infringement in the Federal Court Action, MetroPCS alone would be required to extinguish such legal obligation to the Federal Plaintiffs. However, TCS and MetroPCS owe a common duty to the Federal Plaintiffs not to infringe the Patents. Therefore, as the primarily responsible infringer and sole provider of the LBS technology and services to MetroPCS, TCS should be ordered to wholly indemnify MetroPCS from and against the Federal Court Action.

E. In the Alternative, Common-Law Contribution

30. MetroPCS re-alleges and incorporates paragraphs 1 through 29 above as if fully set forth herein in support of its common-law contribution cause of action.

31. The Federal Plaintiffs sued MetroPCS for patent infringement allegedly resulting from MetroPCS' use and sale of LBS technology and services. The sole means by which MetroPCS provides LBS services to its customers is through the use of TCS' LBS technology and services purchased under the Agreement. MetroPCS relies solely on TCS to provide TCS' LBS technology and services free from patent infringement claims.

32. Should MetroPCS be found liable to the Federal Plaintiffs for patent infringement in the Federal Court Action, MetroPCS alone would be required to extinguish such legal obligation to the Federal Plaintiffs. However, TCS and MetroPCS owe a common duty to the Federal Plaintiffs not to infringe the Patents. Therefore, as the primarily responsible infringer and sole provider of the LBS technology and services to MetroPCS, TCS should be ordered to provide contribution to MetroPCS in relative proportion to TCS' responsibility for the infringement of the Patents, if any.

PRAYER

WHEREFORE, PREMISES CONSIDERED, MetroPCS respectfully requests the following relief:

- (i) A declaratory judgment that TCS has an obligation to defend, indemnify and hold harmless MetroPCS from and against the Federal Court Action;
- (ii) TCS be ordered to specifically perform its obligations under the Agreement, including its obligations under Section 7.4 (IP Claims);
- (iii) TCS be ordered to defend MetroPCS from and against the Federal Court Action;

- (iv) TCS be ordered to pay reasonable costs and attorneys' fees incurred by MetroPCS in its defense of the Federal Court Action;
- (v) TCS be ordered to indemnify and hold harmless MetroPCS from all loss, damage, or liability resulting from the Federal Court Action, if any;
- (vi) TCS be found in breach of the Agreement and an award of all damages, attorneys' fees and costs flowing, directly or indirectly, from the breach of the Agreement by TCS;
- (vii) TCS be ordered to pay any and all amounts, including any royalties and damages resulting from, arising out of, or in connection with the Federal Court Action, if any; and
- (viii) In the alternative, TCS be ordered to provide contribution to MetroPCS in relative proportion to its responsibility for any and all amounts, including royalties and damages, resulting from, arising out of, or in connection with the Federal Court Action, if any; and
- (iv) MetroPCS be awarded all other and further relief to which it may be justly entitled.

Respectfully submitted,

FULBRIGHT & JAWORSKI L.L.P.

/s/

Matthew H. Kirtland
Md. State Bar No. 26089
801 Pennsylvania Avenue, N.W.
Washington, DC 20004-2623
Telephone: 202.662.0200
Facsimile: 202.662.4643

Brett C. Govett
Shea R. Haass
2200 Ross Avenue, Suite 2800
Dallas, Texas 75201
Telephone: 214.855.8000
Facsimile: 214.855.8200

ATTORNEYS FOR PLAINTIFF,
METROPCS WIRELESS, INC.

EXHIBIT

A

NETWORK SERVICES AGREEMENT

This Agreement, dated as of November 12 2007 (the "Effective Date"), is made by and between TeleCommunication Systems Inc, a Maryland corporation ("TCS"), having a principal place of business at 275 West Street, Annapolis, Maryland 21401 and MetroPCS Wireless, Inc., a Delaware corporation ("CUSTOMER") having a principal place of business at 8144 Walnut Hill Lane, Suite 800, Dallas, TX 75231. The parties agree as follows:

Definitions:

"Active User" means any user who has a transaction with the location server once in a given calendar month. A transaction is when one (1) mobile station's unique identifier is received by TCS' Hosted XLS Service within a gpsOne IS-801 V1 call flow in a given calendar month. Examples of Mobile Station identifiers are MDN, MIN, MSID or IMSI. The Hosted XLS Service generates a Location Detail Record ("LDR") for every Active User's transaction.

"Commercial Launch" means the earlier of ninety (90) days after ATP acceptance or the date on which CUSTOMER makes the service generally available to the public utilizing the first location based services application which requires the hosted PDE service.

Section 1. Relationship of the Parties

1.1 Appointment. CUSTOMER hereby appoints TCS, and TCS hereby accepts appointment, as CUSTOMER'S agent solely for purposes of implementing this Agreement and performing services hereunder. CUSTOMER will make use of and deploy TCS technical solutions and services ("the TCS Hosted Xypoint® Location Based Service" or "Hosted XLS Service") throughout its markets. Except as expressly authorized in this Agreement, TCS will not enter into any agreements or undertakings for or on behalf of CUSTOMER without CUSTOMER'S prior written consent.

1.2 Designated Representatives. Promptly after the execution of this Agreement, each party will designate in writing an individual to represent such party in the administration of the Services (as hereinafter defined) and this Agreement. Further, CUSTOMER will designate, and have in place at all times during the Term, a separate individual to represent CUSTOMER in connection with the performance of the Services in each market. Either party may change its designated representatives from time to time by giving written notice of such change to the other party.

Section 2. The Services

2.1 Scope and Performance. TCS will provide the Hosted XLS Services described in the Services Description attached hereto as Exhibit A and Service Level Agreement attached hereto as Exhibit C. TCS will not be responsible for implementation delays or service degradations that are not within its control including, without limitation, implementation delays or service degradations caused by CUSTOMER or interconnecting communications carrier; provided that any launch of service which is affected by such an implementation delay shall be extended to reflect the delay.

2.2 Reserved.

2.3 Cooperation and Assistance. CUSTOMER will cooperate with TCS by providing such information and assistance expressly required to be provided by CUSTOMER in the Services Description. Without limitation of the foregoing, CUSTOMER will provide TCS with access to technical personnel and information in connection with performance of the Services and will furnish all information and assistance required to be provided by CUSTOMER under this Agreement and any Exhibits. Further, TCS and CUSTOMER will cooperate with each other in conducting any field tests and trials that TCS reasonably determines are necessary or desirable to ensure the performance and reliability of the Services. CUSTOMER will promptly notify TCS of

any defect, deficiency or error known to or discovered by CUSTOMER, and TCS will make all reasonable efforts to implement a remedy in a timely manner. TCS shall promptly proceed to correct any material defects, deficiencies or errors known to TCS whether or not discovered by CUSTOMER if such defect, deficiency or error is within the control of TCS.

2.4 Network Equipment and Software. As between CUSTOMER and TCS, title to communications equipment installed by TCS in connection with the performance of the Services will remain with TCS. As between CUSTOMER and TCS, title to all software provided by TCS and used by CUSTOMER or TCS in connection with the Services (the "Software") will remain at all times with TCS. CUSTOMER acknowledges that all intellectual property rights in and to the Software are and will remain the property of TCS. CUSTOMER will not reverse engineer, decompile, disassemble or attempt to reconstruct, identify or discover any source code, underlying ideas or algorithms of TCS software or intellectual property. Concurrently, the parties acknowledge CUSTOMER and/or its licensors are the owners of all right, title and interest in and to the CUSTOMER's network and of all right, title and interest in and to all intellectual property associated with the technology and products, and any derivatives or enhancements thereof which CUSTOMER owns, develops or acquires regarding its wireless communications network at any time.

Section 3. Compensation

3.1 Amounts. CUSTOMER will pay to TCS a Services Fee in the amount shown in Exhibit B - Rate Schedule for each calendar month of service provided pursuant to this Agreement. Such Services Fee will be charged in full for any partial calendar month of service provided. The Rate Schedule covers the cost of standard TCS satellite assistance data services. Non-standard solutions, if required, will be detailed in an addendum to Exhibit A. All amounts under this agreement shall be charged and paid in United States dollars.

3.2 Billing. CUSTOMER will be billed directly for services provided.

3.3 Payment. CUSTOMER will pay the undisputed amount of each invoice without offset, thirty (30) days after receipt of such invoice. Any undisputed amount not paid by the CUSTOMER after the period established in this clause will bear interest at the rate of one percent (1%) per month or the highest rate permitted by applicable law, whichever is less, computed and compounded daily beginning from thirty (30) days from the original date due until the date paid. Payment of such interest will not excuse or cure any breach of or default for late payment.

3.4 Taxes. The compensation and other amounts payable to TCS under this Agreement do not include any sales, use, excise or other applicable taxes. CUSTOMER shall pay applicable sales, use, or excise taxes, local taxes or VAT taxes or similar charges assessed by any local, state or national governmental entity in connection with TCS' provision of the TCS Hosted LBS Service provided under this Agreement. CUSTOMER shall have no responsibility to pay any taxes based on the income of TCS. CUSTOMER will cooperate with TCS to minimize any tax liability, and CUSTOMER shall provide upon demand a Resale Exemption Certificate, if applicable.

3.5 Development Costs. TCS agrees to make all reasonable effort to provide system reporting data in the format(s) reasonably requested by CUSTOMER. TCS shall provide CUSTOMER a proposal for the effort to comply with said request. Development of the reporting formats will not begin until CUSTOMER agrees to pay TCS for all costs of such development. In the event of a request requiring custom development in a manner other than industry agreed upon standards, TCS shall make all reasonable efforts to accommodate such request at CUSTOMER'S expense.

3.6 Audit Rights. CUSTOMER, upon reasonable written notice to TCS, shall have the right to examine or audit TCS' records regarding the Hosted XLS Service provided under this Agreement not more than once during every twelve (12) month period during the Term, to verify the amounts reported and paid by CUSTOMER under this Agreement. CUSTOMER shall treat such records as confidential. Any such audit shall be conducted, to the extent possible, in a manner that does not unreasonably interfere with the ordinary business operations of TCS. If an audit determines that payments made by CUSTOMER have exceeded the correct amount, TCS shall pay CUSTOMER the difference disclosed by the audit or reflect said amount as a credit

against the following invoices to CUSTOMER, if appropriate. In the event the audit determines payments by CUSTOMER have been less than the correct amount, CUSTOMER shall pay to TCS the difference disclosed by the audit within thirty (30) days following receipt of an invoice for such underpayment. If the audit reveals a discrepancy in excess of 5 % of the fees invoiced by TCS, then TCS shall reimburse CUSTOMER for the reasonable cost of the audit; and, notwithstanding any other provision to the contrary in this Section 3.6, Customer may conduct another audit under the same terms during the current twelve (12) month period.

Section 4. Term and Termination

4.1 Term. Unless otherwise terminated by either party in accordance with the provisions set forth in this Agreement, the term of this Agreement shall commence on the Effective Date and shall expire one (1) year from the date of Commercial Launch (the "Initial Term"); provided that upon expiration of the Initial Term, this Agreement will automatically renew for successive one (1) year periods (each a "Renewal Term") unless one party provides to the other party a written notice of non-renewal at least sixty (60) days prior to the expiration of the Initial Term or the then-current Renewal Term. The Initial Term and the Renewal Terms, if any, shall be collectively referred to herein as the "Term." In the event CUSTOMER provides written notice to TCS of its desire to holdover service after this Agreement terminates, TCS agrees to do so for a transition period of no longer than six (6) months at a services fee equal to one hundred thirty percent (130%) of the services fee in effect at the time of the holdover.

4.2 Termination for Cause.

4.2.1 If either party breaches a material term of this Agreement, and such party fails to cure the breach within thirty (30) days following its receipt of written notice from the non-breaching party (or ten (10) days, in the case of payment defaults), then the non-breaching party, in addition to any other remedies it may have at law or in equity, may terminate the Agreement immediately upon written notice to the breaching party.

4.2.2 CUSTOMER may terminate this Agreement in accordance with the termination provisions set forth in Section 3.2(c) or (d) of Exhibit D.

4.3 Other Termination. TCS or CUSTOMER may, upon ninety (90) days written notice to CUSTOMER, immediately terminate this Agreement if the Federal Communication Commission ("FCC") or any other regulatory agency promulgates any rule, regulation, judgment or order that (a) prohibits or substantially impedes (in effect or application) TCS from fulfilling its obligations under this Agreement or (b) has a material adverse effect on TCS' ability to conduct its business upon terms and conditions reasonably acceptable to TCS.

4.4 Effect of Termination. Upon any expiration or termination of this Agreement, all undisputed amounts owing to TCS hereunder will be immediately due and payable.

4.5 Survival. Sections 2.1, 2.4, 3.3, 3.4, 4.1, 4.4, 4.5, 5, 6.3, 7, 8 and 9 (together with all other provisions of this Agreement that may reasonably be interpreted or construed as surviving termination) will survive the termination of this Agreement.

Section 5. Confidentiality

5.1 Confidential Information. As used in this Agreement, "Confidential Information" means any information of either TCS or CUSTOMER that is not generally known to the public, whether of a technical, business or other nature including, but not limited to, trade secrets, know-how and information relating to the technology, cell sites, customers (e.g., subscriber counts), business plans, promotional and marketing activities, finances and other business affairs.

5.2 Use and Disclosure. In the performance of or otherwise in connection with this Agreement, either party (the "Receiving Party") may receive certain Confidential Information of the other party (the "Disclosing

Party"). The Receiving Party, except as expressly provided in this Agreement or as necessary to perform its obligations under this Agreement, will not disclose such Confidential Information to any third party or use, or permit others to use, such Confidential Information for any purpose other than the purpose for which it was disclosed without the Disclosing Party's prior written consent. Without limiting the generality of the foregoing, the Receiving Party will not use such Confidential Information for any competitive services to those described in Exhibit A. The Receiving Party will take reasonable measures to avoid disclosure, dissemination or unauthorized use of such Confidential Information, including, at a minimum, those measures it takes to protect its own confidential information of a similar nature.

5.3 Exceptions. The provisions of Section 5.2 will not apply to any information that (a) is or becomes publicly available without breach of this Agreement, (b) was known to the Receiving Party at the time of its receipt from the Disclosing Party, (c) is rightfully received from a third party who did not acquire or disclose such information by a wrongful or tortious act, (d) is independently developed by the Receiving Party without reference to any Confidential Information of the Disclosing Party, (e) is required to be disclosed by process of law or by any regulatory authority, or (f) is used or disclosed with the prior written consent of the Disclosing Party. If the Receiving Party is required to disclose any of the Disclosing Party's Confidential Information due to process of law or otherwise as required by any regulatory authority, the Receiving Party will provide written notice thereof to the Disclosing Party as soon as reasonably possible prior to making such disclosure. Without limiting the foregoing, CUSTOMER is expressly authorized to provide any and all accuracy measurements and/or reports demonstrating system performance to the FCC.

Section 6. Warranties

6.1 Warranty. TCS warrants to CUSTOMER that the Services provided to CUSTOMER by TCS, will conform in all material respects to any applicable performance requirements set forth in the Services Description, the Standard Operating Procedures ("SOP" or "SLA"), and the Statement of Work ("SOW") (collectively the "Requirements"). TCS will work to ensure the hosted location service works with CUSTOMER'S cellular network as far as is in TCS' control. TCS is not responsible for conditions in CUSTOMER'S network.

6.2 Remedies. If any Services fail to conform to the warranty set forth in the Requirements, and CUSTOMER notifies TCS of such nonconformance in writing within thirty (30) days after the date of such nonconformance, TCS shall use good faith efforts to correct such nonconformance as soon as commercially possible. If TCS fails to correct such nonconformance or agree to a mutually acceptable plan within thirty (30) days of notification by CUSTOMER, CUSTOMER immediately may terminate the Agreement upon written notice to TCS.

6.3 EXCLUSIVITY OF REMEDIES. TCS MAKES NO REPRESENTATIONS OR WARRANTIES WITH REGARD TO THE TCS SERVICES OR OTHER ITEMS FURNISHED UNDER THIS AGREEMENT EXCEPT AS SET FORTH IN THE REQUIREMENTS. THE REMEDIES OF CUSTOMER UNDER THE REQUIREMENTS ARE THE SOLE AND EXCLUSIVE REMEDIES OF CUSTOMER UNDER THIS AGREEMENT. EXCEPT AS PROVIDED IN SECTION 6.2, TCS DISCLAIMS AND CUSTOMER WAIVES AND RELEASES ALL RIGHTS AND REMEDIES OF CUSTOMER AND ALL WARRANTIES, OBLIGATIONS AND LIABILITIES OF TCS, EXPRESS OR IMPLIED, ARISING BY LAW OR OTHERWISE, WITH RESPECT TO THE SERVICES OR OTHER ITEMS FURNISHED UNDER THIS AGREEMENT, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

Section 7. Indemnification

7.1 Acknowledgement. CUSTOMER and TCS acknowledge their intent that TCS, in its performance of the TCS Services, enjoy the same immunity from or limitation of liability and or indemnity from state or federal government entities as is available to CUSTOMER, its agents or subcontractors, under applicable law. CUSTOMER will assist TCS, at TCS' expense, in obtaining the benefit of such immunity, or limitation, or indemnity, if necessary and available. To the fullest extent permitted by applicable law, the foregoing immunity, limitation of liability, and/or indemnity will apply regardless of any fault, negligence, strict liability or product liability of TCS in connection with the provision of services under this Agreement.

7.2 Indemnity by Customer. Subject to Section 7.1, CUSTOMER will defend, indemnify and hold harmless TCS (and its directors, officers, employees, representatives, agents and third party vendors) from and against any and all claims, losses, harm, costs, liabilities, damages and expenses (including, without limitation, reasonable attorneys' fees) to the extent arising out of or in connection with any act or omission by CUSTOMER or its employees, agents or representatives in the operation of any wireless communications service (including, without limitation, any cellular, PCS, SMR, PDE mobile satellite, air-to-ground, pager or other radio common carrier system) for which TCS provides its services under this Agreement. Upon CUSTOMER'S written request, TCS will provide reasonable assistance in the defense of such claims, provided that any indemnification provided under this Section 7.2 shall not apply to the extent it arises out of or in connection with any act or omission of gross negligence or willful misconduct by TCS or its employees, agents, or representatives.

7.3 Indemnity by TCS. Subject to Section 7.1, and 7.2, TCS will defend, indemnify and hold harmless CUSTOMER (and its directors, officers, employees, representatives, agents and third party vendors) from and against any and all claims, losses, harm, costs, liabilities, damages and expenses (including, without limitation, reasonable attorneys' fees) to the extent arising out of or in connection with any act or omission constituting gross negligence or willful misconduct by TCS or its employees, agents, or representatives. Upon TCS' written request, CUSTOMER will provide reasonable assistance in the defense of such claims, provided that any indemnification provided under this Section 7.3 shall not apply to the extent it arises out of or in connection with any act or omission of gross negligence or willful misconduct by CUSTOMER or its employees, agents, or representatives.

7.4 IP Claims. Subject to CUSTOMER'S compliance with the terms of this Section 7.4 and Sections 7.5 and 7.6, TCS shall defend, indemnify and hold harmless CUSTOMER and its officers and directors (each, an "Indemnified Party" and, collectively, the "Indemnified Parties") from and against any loss, damage, or liability, including reasonable costs and attorney fees, to the extent that such loss, damage or liability arises out of any third-party claim, suit, or allegation that CUSTOMER'S use of any product or service provided by TCS under this Agreement or any claim under Sections 7.2 or 7.3 infringes the patent, trademark, copyright rights, trade secret rights of other proprietary rights of such third party (collectively the "IP Claim"). TCS shall be entitled to solely control the defense of any such IP Claim with attorneys of its choice, and shall solely control the disposition of any such IP Claim provided such disposition admits no wrong-doing on the part of CUSTOMER. CUSTOMER shall not be entitled to any defense, indemnification or the like under this Section to the extent any such IP Claim arises out of CUSTOMER'S unauthorized use, negligent use, or misuse of any TCS product or service.

7.5 Indemnity Procedure. Each party shall provide the other party with prompt written notice of any IP Claim or other claim under Sections 7.2 or 7.3 for which it seeks indemnification hereunder. Each indemnified party shall at its own expense, provide reasonable assistance to the Indemnifying Party in the defense of such claim, at the Indemnifying Party's expense, and shall permit the Indemnifying Party to control such defense.

7.6 IP Claim Infringement Remedy. If the use, manufacture, or sale of any product or service furnished hereunder becomes subject to an IP Claim, TCS shall, at TCS' option and at no expense to the CUSTOMER, (i) by license or other release from claim of infringement obtain for the CUSTOMER the right to make, use, sell, and/or import into the United States the product or service, as appropriate; (ii) substitute an equivalent non-infringing product or service reasonably acceptable to the CUSTOMER, which meets the specifications for the product, and extend this indemnity thereto; or (iii) modify such product or service to make it non-infringing but continue to meet the specifications therefore, and extend this indemnity thereto.

Section 8. Limitations of Liability

NEITHER PARTY WILL BE LIABLE TO THE OTHER (OR ITS DIRECTORS, OFFICERS, EMPLOYEES, REPRESENTATIVES, AGENTS, SUBCONTRACTORS, CUSTOMERS OR ANY OTHER THIRD PARTY) FOR ANY INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE SERVICES OR SUCH PARTY'S PERFORMANCE OF OR FAILURE TO PERFORM ITS OBLIGATIONS UNDER THIS AGREEMENT OR FOR THE CLAIMS OF THIRD PARTIES FOR LOSSES OR DAMAGES (EXCEPT AS PROVIDED IN SECTION 7). EXCEPT FOR AMOUNTS PAYABLE BY CUSTOMER TO TCS UNDER SECTION 3, AND THE INDEMNIFICATION OBLIGATIONS SET FORTH IN SECTION 7, EACH PARTY'S LIABILITY (WHETHER IN TORT, CONTRACT OR OTHERWISE AND NOTWITHSTANDING ANY FAULT, NEGLIGENCE (WHETHER

ACTIVE, PASSIVE OR IMPUTED), PRODUCT LIABILITY OR STRICT LIABILITY OF SUCH PARTY) UNDER THIS AGREEMENT OR WITH REGARD TO THE SERVICES OR OTHER ITEMS FURNISHED UNDER THIS AGREEMENT WILL NOT EXCEED THE TOTAL COMPENSATION ACTUALLY PAID TO TCS FOR THE PREVIOUS TWELVE MONTHS UNDER SECTION 3 OR \$100,000, WHICHEVER IS GREATER.

Section 9. Miscellaneous

9.1 Force Majeure. Neither party will be liable for, or be considered to be in breach of or default under this Agreement on account of, any delay or failure to perform as required by this Agreement to the extent caused or contributed to by any condition, circumstance, event or occurrence beyond its reasonable control. If any such delay occurs, the applicable Activation Date will be extended solely to the extent that such delay was caused or contributed to by such condition, circumstance, event or occurrence. To the extent that a Party claims a force majeure that continues for more than 30 days, the other Party may terminate this Agreement with neither party having any further obligations (or early termination penalties or fees) to the other. CUSTOMER shall remain liable for any fees properly owing to TCS for services that predate the date of such termination.

9.2 Settlement of Disputes. A senior executive of either party may, upon notice to the other party of a dispute arising out of or related to this Agreement or within five (5) business days after receipt of a notice from the other party of a dispute arising out of or related to this Agreement, elect to utilize a non-binding resolution procedure whereby each party presents its position at a hearing before a panel consisting of one senior executive of each of the parties and, if such senior executives can agree upon such an individual, a mutually acceptable neutral advisor. If a party elects to use the procedure set forth in this Section, the other party shall participate in good faith. The hearing shall occur no more than ten (10) business days after either party notifies the other party of its election to use the procedure set forth in this Section. If such senior executives cannot resolve the matter, the neutral advisor, if any, may be asked to assist such senior executives in evaluating the merits of each party's position. The parties shall each bear their respective costs incurred in connection with the procedure set forth in this Section, provided that the parties shall each be responsible for one-half of the costs, fees and expenses of the neutral advisor, if any, and any facility required for the hearing. If elected, the procedure set forth in this Section 9.2 shall be used prior to employing any other alternative dispute resolution procedures including those set forth in Section 9.3. All proceedings shall be conducted in English.

9.3 Disputes. If a claim, dispute or controversy (a "Dispute") arises out of or relates to this Agreement, or its breach, and the parties have not been successful in resolving such Dispute through negotiation or the use of the procedures described in Section 9.2, the Dispute may be submitted to any federal or state court of competent jurisdiction sitting in and for the state of Maryland.

9.4 Notices. Any notice or other communication under this Agreement will be in writing, in the English language, and will be delivered in person, by facsimile, or mailed, properly addressed and stamped, to the intended recipient at the address appearing on the signature page of this Agreement. Notices shall be deemed received only upon actual receipt. Either party may change its address by giving the other party notice of the change in accordance with this paragraph.

As to CUSTOMER:

MetroPCS Wireless, Inc.
8144 Walnut Hill Lane, Suite #800
Dallas, TX 75231
Attention: VP, Corporate Engineering
Telephone: 214-265-2550
Facsimile: 972-860-2688

With copy to:

MetroPCS Wireless, Inc.
8144 Walnut Hill Lane, Suite #800
Dallas, TX 75231

Attention: General Counsel
Telephone: 214-265-2550
Facsimile: 972-860-2682

As to TCS:

TeleCommunication Systems Inc.
275 West Street
Annapolis, Maryland 21401
Attention: Contracts
Telephone 410-263-7616
Facsimile: 410-263-7617

9.5 No Waiver. The failure of either party to insist upon or enforce strict performance by the other of any provision of this Agreement or to exercise any right under this Agreement will not be construed as a waiver or relinquishment of its right to assert or rely upon any provision or right in that or any other instance, and such provision or right will remain in full force and effect.

9.6 Assignment. This Agreement and the rights and obligations hereunder may not be assigned, delegated, sublicensed or transferred by either party without the prior written consent of the other party, which consent shall not be unreasonably denied. Any attempted assignment, delegation, sublicense or transfer without such written consent shall be void and of no effect. Notwithstanding the above, either party may assign this Agreement at any time to a successor entity in connection with a sale or merger of the whole or a part of said party's business or to an Affiliate entity which controls, is controlled by or is under common control with the party or to an Affiliate entity in which either party owns 50% or more interest or has at least a 50% equity interest.

The terms and conditions of this Agreement shall inure to the benefit of and be enforceable by the respective successor entity or Affiliate. Any attempted assignment or delegation in contravention of this Section shall be null and void and shall be grounds for immediate termination. "Affiliate" means an entity that controls, is controlled by or is under common control with another entity; provided that, for purposes of this definition, "to control" means to have direct or indirect ownership of more than fifty percent (50%) of the outstanding shares or equity of an entity.

9.7 Publicity. No press releases or other public announcements of or relating to this Agreement shall be made by either party without the prior mutual written consent of the other party unless required by law or regulatory authority. The parties shall work in good faith to produce a mutually agreed upon press release regarding their relationship. Each party may use the name and/or logo of the other party in its supplier or customer lists and related materials only after receiving the prior written approval of the other party.

9.8 Records. TCS shall maintain and shall retain for a period of not less than two years after the termination or expiration of this Agreement complete and accurate operational documentation regarding TCS' compliance with the warranty set forth in Section 6.1.

9.9 Counterparts. This Agreement may be executed in counterparts, which together will form one agreement.

9.10 Governing Law and Language. This Agreement shall be construed and enforced in accordance with the Laws of the State of New York without regard to its conflicts of laws provisions. Subject to Sections 9.2 and 9.3, the venue for any action brought hereunder shall be the federal or state courts located in New York, New York. The English language shall govern this Agreement and all interpretations hereunder.

9.11 Entire Agreement. This Agreement, together with the attached Exhibits, which are incorporated herein by this reference, sets forth the entire agreement of the parties, and supersedes any and all prior agreements, related to the Services. No change, amendment, or modification of any provision of this Agreement will be valid unless set forth in a written instrument signed by both parties.

IN WITNESS WHEREOF, The parties have executed this Agreement on the date first above written.

TeleCommunication Systems Inc.:

By: 

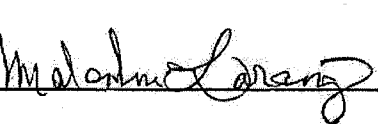
Printed: Mark D. Johnson

Title: Associate Counsel

⁸⁰ Date: 11/12/07

Address: 275 West Street
Annapolis, MD 21401

CUSTOMER: MetroPCS Wireless, Inc.

By: 

Printed: Malcolm Lorang

Title: Sr. Vice President and Chief Technology Officer

Date: _____

Address: 8144 Walnut Hill Lane, Suite #800
Dallas, TX 75231

EXHIBIT B
RATE SCHEDULE

The price for the Services is as follows:

1. Hosted Pricing

Hosted Tiered Subscriber-Based Pricing

Hosted Tiered Subscriber-Based Pricing is intended to reflect improved margins for MetroPCS as active LBS subscriber volumes build while providing an option to start at a very low initial subscriber count at launch.

Active Subscriber Range	Price per subscriber, per month
0 - 50,000	\$0.95
50,001 - 100,000	\$0.90
Over 100,000	\$0.85

*Monthly Minimum is \$5,000.00 which includes equivalent subscriber capacity.

Notes:

- (1) No upfront fees. TCS has waived the integration and implementation fees for this project.
- (2) A Hosted XLS contract requires a minimum one (1) year commitment.
- (3) TCS agrees to waive the \$5,000 monthly minimum for the first six (6) months of commercial operation.
- (4) Metro PCS will make all reasonable efforts to ensure that all CUSTOMER LBS applications will operate primarily in MS-based mode for PDE capacity management. CUSTOMER will inform TCS of applications to be commercially launched within thirty (30) calendar days of that commercial launch. CUSTOMER will provide one (1) production-capable phone with commercial-ready LBS application to TCS no less than twenty-one (21) days prior to commercial launch. TCS may also request LBS application test results from Metro PCS regarding MS-based behavior or other characteristics related to PDE capacity management.
- (5) All prices shown below are in U.S. dollars.
- (6) Prices are quoted based on the standard terms and conditions of Network Services Agreement
- (7) Hosted pricing models can not be changed mid contract. The Hosted model can migrate to in network with our standard credit as described below in Section 6.4.
- (8) The above pricing table is not an aggregate pricing table, meaning that MetroPCS will always pay \$.95 for the first 50K subs, and \$.90 for the next 50K subs. At 100K subs, MetroPCS will be paying \$.85 for sub number 100,001 and beyond. We do not re-price all subs once active subscriber counts cross each volume threshold.

2. Additional Items

After TCS designs a complete solution for the operator, there may be additional items that must be priced separately based on MetroPCS' deployment choice including those listed below:

- TCS Base Station Almanac Assistance Scope

Although it is a Metro PCS' responsibility (or a 3rd party representative) to provide a User Plane (CDMA 801-compliant) LBS-ready Type 1 or 2 User Plane format BSA to TCS in the agreed upon format as specified in the Qualcomm CDMA Network Base Station Almanac (BSA) ASCII Format Specification 80-V2275-3 Rev.D, TCS shall agree to provide the following related to BSA as part of this contract:

1. Training on the BSA file transfer process.
2. Setup of network folders and associated scripts for BSA ftp file transfer process.
3. Providing Metro PCS with Qualcomm User Plane BSA format guidelines documentation as part of ICD document bundle.
4. Upon receipt of BSA files, notification within five (5) business days of defects in the BSA to Metro PCS (or 3rd party representative). This will be based on results of BSA validation using the Qualcomm SnapCell utility.

The following are exclusively Metro PCS (or a 3rd party representative) responsibilities:

1. Technical subject expertise assistance on explaining BSA fields and calibration to Metro PCS personnel.
2. Acceptance of a User Plane BSA in Type 1 User Plane BSA or a Type 2 User Plane or Dual Protocol BSA as outlined in the Qualcomm BSA specification documentation.
3. Creation and ongoing maintenance of a user plane Qualcomm BSA format to enable LBS.

The following activities would be considered out-of-scope and would require additional, chargeable services:

1. BSA calibration or consulting services related to optimization or correction beyond what is available with the output from the SnapCell utility.
2. BSA creation or modification training services.

3. Hosted to In – Network Pricing Credit

TCS offers a credit program for customers who wish to migrate from the TCS commercial hosted location offering to the TCS XLP commercial in-network platform.

The program calculates the credit as follows:

1. 25% of any recurring fees over the last 12 months of the hosted service forms the base of the credit.
2. The credit can then be applied to the list price of the MPC application (not to exceed 50% of the list price), including future enhancements such as V2 call flows. The credit expires 180 days after the launch of the in-network system

Any work beyond that which has been described above shall be provided in a written statement of work and agreed to by both parties. The quote for any additional effort will be at the then current prices on a time and material basis.

4. Professional Services Rates

TCS is pleased to offer additional services to METRO PCS. The following Professional Services rates will apply. Travel and expenses will be billed according to the Network Services Agreement.

Product enhancements or customized report or deliveries will require a separate Statement of Work and Quotation.

Additional Services for Out-of-Scope or Expedited Activities	Notification period from CUSTOMER	Rate
Professional Services support and BSA Consulting	Fourteen (14) calendar day notice for general testing support, larger projects may require additional lead time	US \$250/hr
Professional Services fee allocated in minimum one hundred (100) hour blocks	Five (5) business day notice	US \$200/hr
Expedited or after hours professional services Fee	Two (2) business day notice	US \$375/hr

Additional Consulting Services and Technical Support: TCS will provide a proposal for any required additional consulting services or technical support. Such services and/or support will not be provided until a purchase order or an amendment to this Agreement for such services or support has been provided by CUSTOMER. Additional expenses for other direct charges, such as travel, will be reimbursed at cost subject to prior approval by CUSTOMER.

TeleCommunication Systems Inc.
Network Applications Division
2401 Elliott Avenue
Seattle WA 98121
Phone 206 792-2000
Fax 206 792-2001
www.telecomsys.com



EXHIBIT C


Xypoint Location Service (XLS)

Standard Operating Procedures for Wireless Carriers

Document Number: N/A

Document Release V 1.2

October 31, 2007

The xypoint location platform
from 

CONFIDENTIAL & PROPRIETARY
Limited Distribution to Authorized Persons Only

Created 2006 and Protected as an Unpublished Work
under the US Copyright Act of 1976

Copyright 2006 TeleCommunication Systems Inc.
All Rights Reserved

Copyright © 2007 TeleCommunication Systems, Inc., All rights reserved.

Reproduction or use of editorial or pictorial content in any manner is prohibited without written permission. Specifications and content may change without notice.

Xypoint, XLP, TeleCommunication Systems, Voyager, and the TCS logo are trademarks, registered trademarks, or service marks of TeleCommunication Systems, Inc. in the U.S. and certain other countries.

All other brand names and product names used in this document are trademarks, registered trademarks, or service marks of their respective holders.

Document History

Version	Date	Description
1.0	May 2007	Hosted XLP SOP for TCS Implementation
1.1	Sept 2007	Hosted XLP SOP for TCS Implementation - modified
1.2	Oct 2007	Hosted XLP SOP for TCS Implementation – modified for METROPCS use

Table of Contents

1. Introduction	4
1.1. References	4
1.2. How This Document Is Organized	6
1.3. Communication Between You and TCS	7
2. Service Impairment Procedures	8
2.1. TCS Service Impairment Levels	8
2.2. How to Report an Impairment to TCS	10
2.3. TCS Escalation and Notification Procedures	11
2.4. TCS Operations Management Team	12
2.5. Root Cause Analysis Reports	14
3. Maintenance Responsibilities	16
3.1. Base Station Almanac Maintenance	16
3.2. Precalibration Connectivity Testing	18
4. Troubleshooting	19
4.1. Conditions that May Affect Service	20
4.2. Location Services Troubleshooting	21
4.3. Availability of .fin and/or LDR Files	23
5. Change Control	24
5.1. How to Report a Change to TCS	24
5.2. Network Connectivity Changes	26
5.3. Handset, Device and Application Changes or Additions	26
5.4. BSA File	27
5.5. WARN Server	27
5.6. Increased Load	28
5.7. Test Activity	28
5.8. TCS-Initiated Configuration Changes	29
6. Professional Services	30
7. Mergers and Acquisitions	32
Appendix A Important TCS Contact Information	33
Appendix B Glossary of Terms	34

List of Tables

Table 2-1: SIL Definitions 9

Table 2-2: Target Service Restoration Times 9

Table 2-3: Incident Notification Timeframes 12

Table 2-4: Operations Team Escalation Path 13

Table 5-1: Information to Include in a Network Change Notice 25

1. Introduction

This document explains the standard operating procedures for wireless carriers who are using the TeleCommunication Systems (TCS) Xypoint Location Services under the implementation program.

The audience for this document is the wireless carriers' Network Operations Center (NOC), its maintenance teams, and any other wireless carrier Operations staff involved in wireless system maintenance.

This document covers post-deployment procedures only. For information about deployment procedures, see the *XLS Deployment Guide for Wireless Carriers*.

Please send any comments about the accuracy and quality of this document to techdocs@telecomsys.com.

1.1. References

The following references are used throughout this document:

Table 1: Referenced Documents and Standards

No.	Reference
1	TCS Interface Control Documents (ICDs)
2	TCS XLS Service Description
3	TCS XLS Deployment Guide
4	TeleCommunication Systems, Inc. B2B Connectivity Guidelines
5	TCS sFTP User Guide
6	Qualcomm Location-Based Services System Specification 80-V6410-1 D
7	Qualcomm gpsOne™ User Plane Handset Specification 80-V6114-1 Rev. D
8	Qualcomm gpsOne™ User Plane MS-MPC Protocol Specification 80-V5456-1 Rev. D
9	Qualcomm gpsOne™ User Plane E5' Protocol Specification 80-V5458-1 E
10	cdma2000™ Standards for Spread Spectrum Systems - TIA/EIA/IS-2000
11	CDMA Network Base Station Almanac (BSA) ASCII Format Specification 80-V2275-3 Rev. D
12	Qualcomm BSA Deployment Guide for CDMA Networks (PDM 4.x BSA Deployment Guide for CDMA Networks (800-40004-000 Rev. B)).
13	TIA/EIA-637-A, Short Message Service
14	gpsOne™ Mobile Station Sensor Interface Application TCP/IP Wrapper Interface Specification CL93-V2246-1 Rev. B September 24, 2002
15	TIA/EIA/IS-841, TIA/EIA-41-D Based Network Enhancements for MDN Based Message Centers
16	TIA/EIA-41D, Cellular Radio Telecommunications Intersystem Operations
17	TIA/EIA/IS-881 Location Services Authentication/Privacy/Security and Enhancements

No.	Reference
18	TIA/EIA/IS-801, Position Determination Service Standard for Dual Mode Spread Spectrum Systems

1.2. How This Document Is Organized

This document explains TCS and wireless carrier procedures and responsibilities in the following areas:

- **Service impairment.** How to report an impairment to TCS and how TCS responds to impairments. (See Section 2.)
- **Maintenance responsibilities.** Description of the ongoing maintenance that you are responsible for performing. (See Section 3.)
- **Troubleshooting.** Procedures that TCS may ask you to perform to troubleshoot an impairment or prevent a service interruption. (See Section 4.)
- **Change control.** How and when to notify TCS about planned network changes. (See Section 5.)
- **Professional Services.** How to request an enhancement to your service. (See Section 6.)
- **Mergers and acquisitions.** How to notify TCS of changes resulting from a merger or acquisition. (See Section 7.)

1.3. Communication Between You and TCS

For TCS to support the operation of location services in your markets, it is important for your Operations team and the TCS NOC to keep each other informed of all network events and business interface changes, planned and unplanned. Accurate contact information is therefore essential for both parties. You and TCS have the responsibility to inform each other of changes in contact information as soon as possible and to conduct a quarterly management review of contact information.

Please email all contact information changes to the TCS NOC at NOC@telecomsys.com. TCS will acknowledge your email.

2. Service Impairment Procedures

TCS works with you to provide continuous service seven days a week, 365 days a year. This cooperative effort starts at deployment and continues thereafter. Although TCS monitors request processing at all times, you are responsible for contacting the TCS NOC to report symptoms of trouble as soon as they become apparent.

2.1. TCS Service Impairment Levels

TCS defines three service impairment levels (SILs), as described in Table 2-1. The SIL determines the responsibilities of the TCS NOC when responding to a service impairment.

For each SIL, TCS has a target restoration time, as shown in Table 2-2. Typically, services are restored within the target time.

Table 2-1: SIL Definitions

SIL 1	SIL 2	SIL 3
High level of impact on service delivery. Service degradation may be apparent to all or most external stakeholders. May involve a trend of SIL 2 events for a given system or process.	Service is suffering an unacceptable level of degradation but is not completely unavailable. Service degradation is apparent to external stakeholders. May involve a trend of SIL 3 events for a given system or process.	Low level of impact on service delivery. Service degradation may be apparent to some external stakeholders.

Table 2-2: Target Service Restoration Times

SIL 1	SIL 2	SIL 3
Two (2) hours	Eight (8) hours	No more than 30 (thirty) calendar days

2.2. How to Report an Impairment to TCS

Your main point of contact for service impairments is the TCS Network Operations Center (NOC). To report a service impairment, call the NOC and select option 1.

Contact information for the TCS NOC is listed in the following table:

Contact Type	Contact Information
Within the USA:	800.959.3749
International customers:	+1 206.674.1035
NOC email address	NOC@telecomsys.com

When submitting a Trouble Ticket request via email, include the following in the subject line: Trouble Ticket Request XLS <your company name>.

Please be prepared to supply as much of the following information as is relevant:

- Your company name
- The product in question (XLS)
- Description of the impairment
- Your point of contact, including phone number and site
- Your tracking number for the impairment, if any
- Date and time the impairment was noticed
- Cell site
- Market region
- Mobile ID (phone number)
- Phone manufacturer and model
- Chipset with version
- Multiple phones and/or manufacturers
- Repeatability of the impairment
- SS7 and/or TCP/IP network addresses

2.3. TCS Escalation and Notification Procedures

At all times during a service impairment, the TCS NOC follows established procedures to resolve the impairment. The NOC's responsibilities include creating and updating the trouble ticket, managing escalation, and keeping all stakeholders informed of progress.

TCS always notifies you of a service impairment, but the requirements for how and when notification must occur depend on the SIL. Table 2-3 shows the notification requirements.

Table 2-3: Incident Notification Timeframes

SIL 1	SIL 2	SIL-3
Notification occurs as soon as possible, but no longer than one (1) hour after incident identification. Subsequent updates will occur hourly or as needed.	Initial notification occurs as soon as possible, but no longer than two (2) hours after incident identification. Subsequent updates occur as needed.	No notification required.

TCS notifies you by email, using the most current contact information on file for you. (For information about notifying TCS of changes in your contacts, see Section 1.3.) All communications sent to you by TCS include the TCS trouble ticket number.

2.4. TCS Operations Management Team

Table 2-4 lists contact information for the TCS Operations team. Typically, your personnel will be communicating with TCS NOC support personnel to report issues and get updates to current issues. In some circumstances, other members of the TCS escalation team may contact your personnel.

Table 2-4: Operations Team Escalation Path

Support Tier	Contact Name	Phone and Email Information
Network Operations Center	Network Operations Center (NOC) Systems and network monitoring 24x7x365	800.959.3749 toll-free within the USA +1 206.674.1035 (international) NOC@telecomsys.com
Network Operations Center	Thomas Flanagan Supervisor Network Operations Center	206.792.2148 office 206.240.9064 mobile tflanagan@telecomsys.com
Network Operations Center	Cynthia Redding Manager Network Operations Center	206.792.2336 office 206.234.6664 mobile credding@telecomsys.com
Network Operations Center	Marty Thawsh Manager Advanced Technical Assistance Center	206.792.2240 office 206.491.0577 mobile mthawsh@telecomsys.com
Network Operations Center	Jeri Ginnaty Manager Network Operations Center	206.792.2016 office 206.940.0103 mobile jginnaty@telecomsys.com
Operations	Jay Shelton Senior Director Engineering and Operations	206-792-2270 office 425-891-9358 mobile jshelton@telecomsys.com
Final Escalation Point	Dan Allen Senior Vice President Operations	206.792.2392 office 206.669.1647 mobile dallen@telecomsys.com

2.5. Root Cause Analysis Reports

TCS sends you a Root Cause Analysis (RCA) report within 10 business days of incident resolution for SIL 1 and SIL 2 incidents. For SIL 3 incidents, TCS sends you an RCA report only on request. The report includes the following information about the incident:

- Date and duration
- Services affected
- Primary cause
- Actions taken to resolve
- Long-term corrective actions

TCS sends the report to all the parties on your contact list who receive incident-related notifications.

3. Maintenance Responsibilities

This section describes ongoing maintenance activities and test assistance for which you are responsible.

3.1. Base Station Almanac Maintenance

Maintaining the accuracy and completeness of the base station almanac (BSA) is the customer's responsibility. BSA accuracy and completeness are essential because the precision of the location information delivered by the XLS depends on them.

A critical factor in the Position Determination Module (PDM's) ability to provide accurate position determination is having the most complete and accurate network cell tower information for the location services area. This information is contained in the base station almanac. The BSA is a Database that contains identifying information for each cell sector, each sector's location and other information used to enhance the accuracy of a PDM position determination over a specific coverage area.

TCS provides you with Snaptrack tools that are used to create a BSA, process BSA files and review Base Station (BS) look up results contained in the PDE binary log files.

You and TCS exchange data relating to your BSA records. This exchange involves two kinds of activity:

- METROPCS send updated BSA records to TCS. Before sending the data, METROPCS must run the CDMA IS-801 compliant BSA through SnapCell, a SnapTrack® utility, to process it and validate its formatting. METROPCS will then send the output User Plane compatible BSA file by using FTP/SFTP to TCS.

For details on connecting to the TCS FTP site, please refer to the *TCS sFTP User Guide*, or contact Carrier Services at XLSCarrierServices@telecomsys.com.

- TCS provides you records of XLS activity in the form of binary (.fin) files. You use SnapCell to calibrate the BSA using the .fin files to your BSA.

The result of this exchange is ongoing refinement of your BSA and regular updating of the BSA in the XLS.

For complete information about exchanging BSA data, see the SnapTrack document *PDM 4.x BSA Deployment Guide for CDMA Networks (800-40004-000 Rev. B)*.

3.2. Precalibration Connectivity Testing

The customer is responsible for conducting test calls to calibrate BSA data. Using the tools supplied by TCS, you can process PDE binary log files to provide statistics and an output file of the issues detected by the PDM. You can use this information to identify BSA issues needing correction and BSA calibration. As an added service to you, TCS can support your calibration effort by giving the tester confirmation of pseudonoise (PN) lookup success in the BSA at each calibration point before the tester begins placing test calls.

Xypoint Location Service

Standard Operating Procedures for Wireless Carriers

Precalibration connectivity testing is available Monday through Friday from 9 a.m. to 3 p.m. Pacific Time. It is provided as a convenience. You can conduct BSA calibration test calls without using this service.

4. Troubleshooting

TCS is responsible for maintaining the functionality of the XLS and monitoring and maintaining connectivity between the XLS and the other elements of the network, including the WARN feed. TCS is also responsible for making .fin file data available.

When an impairment related to the XLS occurs, the TCS NOC works with you and other stakeholders to diagnose and resolve the cause. In diagnosing impairments, TCS can examine call flows at the level of the individual message.

Cooperation among you, TCS, and other stakeholders is sometimes necessary to resolve service impairments or respond to other circumstances that affect service.

It is important to report to the TCS NOC an unplanned outage or any other problem that adversely affects service. Report the problem as soon as possible. Although the NOC uses a variety of tools to continuously monitor service, you may sometimes become aware of a problem before the NOC or may have information that is not immediately available to the NOC. Instructions for reporting an impairment can be found in Section 2.2.

4.1. Conditions that May Affect Service

Listed below are a number of factors that can impact the quality of your service.

- BSA data errors—incomplete or inaccurate BSA data.
- The base station from which the location request is made is not provisioned to send Course Location Message
- The base station from which the location request is made is not provisioned into the BSC supporting the service area
- The handsets either do not support or are not enabled to send Systems Parameter Info message to the PDM
- Incomplete or inaccurate MPC or BSA data.
- Failures of the WARN (Wide Area Reference Network). A WARN consists of a number of GPS reference receivers, deployed across a service area, that provide GPS satellite information to the XLS system.
- SS7 message errors.
- TCP/IP message errors.
- Network failures.

4.2. Location Services Troubleshooting

Location service problems usually fall into one of two categories: failed location requests (Section 4.2.1) and location responses that are less accurate than expected (Section 4.2.2).

4.2.1. If Location Requests are Failing

Possible causes of failed location requests include:

- The base station from which the location request is made is not accurately or completely recorded in your BSA.
- The data transport links are not operational.
- The location service is not available.
- The maximum number of PDM sessions has been reached.

Before calling TCS, verify that the XLS is available:

- Retry a call using a different handset model, geographic location, or handset application.
- Verify that the network and transport facility between you and TCS is working correctly.
- Assist TCS in running trace routes and pings of the network route.
- If you supply the WARN feed to TCS, validate that the WARN server is configured properly and that no changes have been made.
- The XLS uses the Quality of Position (QoP) criteria as defined in the IS-881 standard. The system will not return a location if it cannot meet the requested QoP for any reason.

If the service is still unavailable, call the TCS NOC. They may ask you to repeat some of the steps listed above to capture the results and conduct further troubleshooting.

4.2.2. If a Less Accurate Type of Location is Returned

In some circumstances the system may return an AFLT or Cell ID location fix. This is considered to be acceptable system behavior.

The system selects one of a hierarchy of location methods depending on the information that is available in the network and from the handset at the time of the location request. From most to least accurate, the methods are GPS, Hybrid, AFLT, and Cell ID.

Satellite data may not be available in sub-optimal satellite viewing conditions, such as indoors or near windows. If satellite data is not available, the GPS and Hybrid location fixes are not possible and an AFLT or Cell ID location fix may be returned instead.

4.3. Availability of .fin and/or LDR Files

Contact the TCS NOC if problems occur with the delivery of .fin or LDR files.

5. Change Control

It is important that as you or TCS plan changes that can affect your service, you and TCS inform each other in advance of such plans. It is equally important that you understand and follow the procedures and policies governing such changes.

As you expand and change your wireless network, it is necessary to inform TCS of the changes to ensure the continued delivery of quality service. For example, if you do not report the addition of new WARN sites to your network, geographic areas may produce faulty or inaccurate location responses.

The following sections describe most types of changes, and the required lead times for each. Failure to give TCS the required lead time may affect TCS's ability to meet your deadline and may lead to additional charges.

5.1. How to Report a Change to TCS

To notify TCS of an upcoming change, email the TCS NOC at NOC@telecomsys.com. Include all of the information specified in Table 5-1, plus any relevant additional information or forms. TCS will acknowledge your notice by email.

Note

Professional Services fees may apply depending on the change requested.

Table 5-1: Information to Include in a Network Change Notice

Wireless carrier contact information
Carrier's name
Carrier's address, including city, state, and ZIP code
Carrier's telephone number, including area code
Carrier's email address or fax number
Carrier's technical contact
Wireless carrier network change information
The type of change
All necessary technical information, for example, all relevant radio frequency (RF) data
All necessary forms
The network elements to be affected
When the change event will occur
How long the change event will take
The commercial launch date, if any
When TCS must be done with its work
The anticipated impact on service

When calculating turnaround time, TCS considers the date of your request to be the date on which you provided all necessary information.

The following sections describe some of the changes that can be initiated by you or TCS.

5.2. Network Connectivity Changes

TCS connects to wireless operators by using a highly reliable and redundant SS7 network and, depending on how the XLS service is implemented, a redundant public, private, or TCP/IP network. A User Plane implementation requires only IP connectivity, a Control Plane implementation requires both SS7 and IP connectivity.

Notify TCS as soon as possible when you plan to make any changes to the network connectivity or configurations that support the network transport. Such changes can include, but are not limited to:

- New PDSN IP ranges
- Changes to the PDSN IP ranges
- Firewall changes that could impact IP service
- Network transport changes

TCS requires a sixty (60) calendar day lead time for any network-connectivity related change.

5.3. Handset, Device and Application Changes or Additions

Notify TCS if there are any pending changes to your LBS handsets, devices, or applications. Such changes include, but are not limited to, the launch of new devices or LBS applications, changes to the chipset, or modifications to the existing LBS application.

TCS requires a thirty (30) day lead time for handset, device, or application changes or additions.

5.4. BSA File

Notify TCS if there are any major changes to your BSA data. This can include deploying a new market, changing your BSA format or protocol, changing your BSA subcontractor for any reason, or changes to your BSA file feed. This type of change may require development effort by TCS.

TCS requires a thirty (30) calendar day lead time for major BSA file changes.

5.5. WARN Server

If you provide your own WARN feed, TCS must be notified about the following events:

- **Adding, updating, or changing a WARN server.** Notify TCS of the update prior to the change, and provide a complete WARN site survey when the changes are complete.
- **WARN outages.** Notify TCS in advance of any planned WARN outages, and as soon as possible when unplanned outages occur.
- **Adding and removing WARN sites.** Notify TCS in advance about any WARN sites that are added or removed from your network.
- **WARN server transport facility changes.** Both you and TCS must notify each other of any WARN server transport facility changes.

TCS requires a 90-day lead time for WARN server changes.

5.6. Increased Load

Notify TCS of anticipated increases in the customer base that will affect system load.

Note	Additional licensing may be required and your billing structure may be affected by increases in your XLS system usage.
-------------	--

TCS requires notice thirty (30) calendar days in advance of an expected increase in system load.

5.7. Test Activity

TCS requires a fourteen (14) calendar day advance notification of any planned test activity that uses the XLS. Professional Services may apply for testing support.

5.8. TCS-Initiated Configuration Changes

TCS sends you advance notification of all planned maintenance activities. You will receive two-week notice of major system upgrades and 24-hour notice of any other planned maintenance.

Note	Emergency maintenance can be performed at any time without advance notification.
-------------	--

This notice is sent to the appropriate parties on the contact list. The following information is included in the maintenance notification:

- Maintenance window start time
- Maintenance window end time
- Overview of planned activities
- Possible risks
- If you have questions or concerns about a maintenance notification, please contact the NOC.

6. Professional Services

To request an enhancement to your service, please contact TCS and describe the nature of your request. To contact TCS with an enhancement request, send an email to XLSCarrierServices@telecomsys.com.

Listed below is information that you may wish to include so that TCS can evaluate your request.

- Requestor information
- Requestor name
- Requestor e-mail
- Requestor phone
- Date of request
- Requestor title and organization
- Priority
- Request details (please describe the request)
- List (individuals or groups) in your organization expected to benefit from the change.
- Describe the perceived adverse impacts to you or your group if the request is not implemented.
- Additional Information: Reference any attached documentation and to provide any additional information that might be beneficial to TCS during the analysis of your request (including any references to impacted projects or schedules).

7. Mergers and Acquisitions

TCS works with you to ensure smooth transitions during mergers and acquisitions. The transition steps and the timelines vary, depending upon the situation.

In the event that a TCS customer acquires another TCS customer, TCS continues the acquired carrier's service until contacted by the purchasing carrier. Within 30 days of the final acquisition, the purchasing carrier notifies TCS concerning billing methods and deployments. If needed, TCS will then work with you to complete network integration activities according to the lead times specified in Section 5.

For billing, the carrier contacts seattlebillingteam@telecomsys.com; TCS converts the acquired carrier's billing method to match the purchasing carrier's.

Appendix A Important TCS Contact Information

Recipient	Intent	Contact Information
Network Operations Center (NOC)	Report changes in service, report service impairments, and change carrier Operations contacts.	NOC@telecomsys.com and/or 800.959.3749 (within the USA) +1 206.674.1035 (international customers)
XLS Carrier Services	Post –deployment special projects; general XLS process questions/concerns; issue escalations.	XLSCarrierServices@telecomsys.com
Accounts Receivable	Resolve TCS billing questions	seattlebillingteam@telecomsys.com and/or +1 206.792.2000, attention Billing

Appendix B Glossary of Terms

Term	Meaning
AFLT	Advanced forward link trilateration is one of several handset-based methods of determining the current location of the mobile station.
AGPS or A-GPS	Assisted global positioning system provides location determination assistance to the mobile station over the air interface. Using A-GPS, the wireless network can predict the GPS signal the mobile station will receive and convey that information to the mobile station. With this assistance, the size of the search space is greatly reduced, and the time-to-first-fix shortened from minutes to a second or less. In addition, an A-GPS receiver in the mobile station can detect and demodulate signals that are orders of magnitude weaker than those required by conventional GPS receivers.
BSA	The base station almanac contains cell site sector information used for Hybrid, AFLT, and RTD location calculations.
BSC	The base station controller controls a group of base transceiver stations.
BTS	The base transceiver station handles the radio interface to the mobile station. The BTS is the radio equipment (transceivers and antennas) needed to service each cell in the network. A group of base transceiver stations is controlled by a base station controller (BSC).
CDMA	Code division multiple access , a cellular technology originally known as IS-95, competes with GSM technology for dominance in the cellular world.
GPOSREQ	GeoPositionRequest INVOKE is a type of location request.
HLR	The home location register is the main database of permanent subscriber information for a mobile network. The HLR is an integral component of CDMA, TDMA, and GSM networks.
IOS	The Inter-Operability Standard is a version of the TIA/EIA-634 A interface that enhances intervendor compatibility.
ISUP	Integrated services digital network user part is the call control part of the protocol considered "out of band" and connection-based that transfers circuit-related information between nodes in an SS7 network.
J-STD-036	The TIA Interim Standard defining the messaging required to support information transfer to identify and locate wireless emergency service callers.
Lat/lon	Latitude and longitude are a coordinate system by means of which the position or location of any place on the earth's surface can be determined and described. Also known as x,y.
LCS	An acronym for Location Services .
LES	A Location Enabled Server is a client server that is enabled for location services.
MLP	The Mobile Location Protocol is an XML-based protocol developed by the OMA LIF group.
MPC	A mobile positioning center serves as the gateway between the mobile network, the position determining application, and location-dependent applications.
MPCAP	Mobile position capability .
MS	A mobile station is a wireless telephone.
MSC	A mobile switching center is a telephone switch (similar to a central office switch) that bridges a mobile telephone network with another telephone network.

Xypoint Location Service**Standard Operating Procedures for Wireless Carriers**

Term	Meaning
NID	A network identification is a number that uniquely identifies a portion of a wireless operator's total system. It is used by CDMA systems.
OMA	The Open Mobile Alliance consolidates specifications, supports interoperable end-to-end mobile services, and drives architectures and interfaces independent of the underlying wireless networks and platforms.
OSS	Operations support systems are applications that directly support the daily operation of the telecommunication infrastructure.
PDE	A position determining entity determines the position of a mobile station/handset when a wireless caller starts a call or while the caller is engaged in a call. The PDE calculates latitude and longitude and provides this information to the MPC or the MSC depending upon the call flow.
PDM	The position determination module is a component in a PDE that performs a location calculation.
PDSN	A packet data serving node is responsible for establishing, maintaining, and terminating a point-to-point protocol session toward the mobile station. It may also assign dynamic IP addresses in addition to supporting Mobile IP functionality.
Point code	A point code is a unique code that identifies a network node that an SS7 network uses to route the calls accurately.
RF	Radio frequency is electromagnetic waves operating between 10 KHz and 3MHz propagated without guide (wire or cable) in free space.
Signaling Links	SS7 messages are exchanged between network elements over 56 or 64 kilobit per second bi-directional channels known as signaling links . There are six types of signaling links designated from "A" through "F" according to their use in the SS7 network.
SMPP	The short message peer-to-peer protocol is a protocol for exchanging SMS messages between SMS peer entities.
SMSC	A short message service center is a network element in the mobile telephone network that delivers SMS messages
SS7	Signaling system 7 is a signaling protocol used to send and receive ISUP and TCAP messages. SS7 puts the information required to set up and manage telephone calls in a separate network rather than within the same network that the call is made on. Signaling information is in the form of a digital packet.
STP	Signal transfer point is a packet switch in the SS7 network. The STP receives, discriminates, and transfers messages between the signaling points to which it is connected.
TCAP	Transaction capabilities application part is a subprotocol of the SS7 protocol. TCAP is used to transfer noncircuit-related information between nodes.
TCP/IP	Transmission Control Protocol/Internet Protocol is the basic communication language or protocol of the Internet. It can also be used as a communications protocol in a private network either an intranet or an extranet.
VLR	The Visitors Location Register is a registry of which subscribers are currently in a particular geographic area.
Voyager	Voyager is the proprietary TCS software platform that serves as a foundation for the XYPOINT Location Platform.

Term	Meaning
XLP	The Xypoint Location Platform is a standards-based solution that enables wireless operators to offer enhanced location-based data services. The system that gathers and manages location data from a core network, the precise location solution, and applications. Additionally, the XLP centralizes privacy controls and profile management. The XLP contains modular functional elements including a Mobile Position Center (MPC), optional PDE and optional WARN.
XLS	The Xypoint Location Service combines the power of the TCS' XLP with TCS' operations expertise and facilities. Through this service, the XLP is housed in the TCS data center, and operated by a fully staffed Network Operations Center 24-hours a day, 365 days a year.

EXHIBIT D
XYPPOINT Location Service
Statement of Work
For METROPCS

CONFIDENTIAL & PROPRIETARY
Limited Distribution to Authorized Persons Only

Table of Contents

1. INTRODUCTION.....3

2. SCOPE OF WORK.....3

 2.1 REFERENCES.....3

 2.1.1 *High Level Network Diagram*4

 2.2 SCOPE OF XLS SERVICE5

 2.2.1 *TCS Responsibilities*.....5

 2.2.2 *METROPCS Responsibilities*6

 2.2.3 *Assumptions*.....7

3. DELIVERABLES.....7

 3.1 REPORT DELIVERABLES.....8

 3.2 XLS SERVICE SLA, PENALTIES, AND REMEDIES8

 3.3 XLS SERVICE IMPLEMENTATION9

 3.4 TCS IMPLEMENTATION TEAM ACTIVITY10

 3.4.1 *System Integration Issues*11

4. SERVICE ACCEPTANCE.....12

5. CHANGE MANAGEMENT PROCESS.....12

1. Introduction

This Statement of Work ("SOW") is governed by the terms and conditions set forth in the Network Services Agreement by and between TeleCommunication Systems Inc. ("TCS") and METROPCS dated _____, 2007.

The purpose of this document is to describe the scope, tasks, responsibilities, deliverables, milestones, and schedule to support the delivery of TCS' Xypoint Location Service to METROPCS. While the METRO PCS implementation will have unique requirements, a basic set of resources and activities is required for any XLS service implementation. Customer specific requirements will be highlighted as necessary.

This document and associated Interface Control Documents ("ICDs") supersedes all previously written or verbal communication regarding METROPCS' requirements and is the most current document that TCS recognizes as describing any commitment to delivery. The information herein incorporates TCS' verbal and written communication between both parties.

TCS is the sole author of this document. Any modification to this document can be made only upon mutual agreement between TCS and METROPCS. Any change (addition, deletion, or modification) to this Statement of Work may result in increased cost and/or delay in delivery of product and services, as further set forth in Section 5 of the Network Services Agreement.

2. Scope of Work

TCS is providing a Location Based Service that delivers the geographic location of gpsOne capable cellular handsets and devices for METROPCS. The service provided for METROPCS will be limited to the User Plane IS-801 Mobile Originated call flow. This service offering is hosted on equipment located in the TCS data center in Seattle, Washington USA and is supported by staff in Seattle, Washington and Annapolis, Maryland.

The scope of this statement of work is limited to implementation services for the TCS licensed service, XLS, as described in the TCS XLS Service Description.

2.1 References

The following references are used throughout this document.

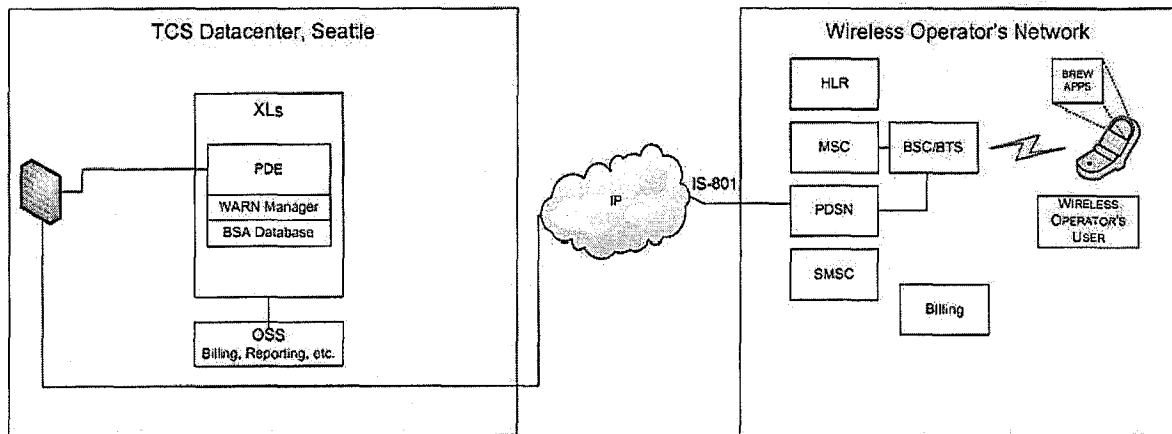
Table 1: Referenced Documents and Standards

No.	Reference
1	TCS Interface Control Documents (ICDs)
2	TCS XLS Service Description
3	TCS XLS Deployment Guide

No.	Reference
4	TeleCommunication Systems, Inc. B2B Connectivity Guidelines
5	Qualcomm Location-Based Services System Specification 80-V6410-1 D
6	Qualcomm gpsOne™ User Plane Handset Specification 80-V6114-1 Rev. D
7	Qualcomm gpsOne™ User Plane MS-MPC Protocol Specification 80-V5456-1 Rev. D
8	Qualcomm gpsOne™ User Plane E5' Protocol Specification 80-V5458-1 E
9	cdma2000™ Standards for Spread Spectrum Systems - TIA/EIA/IS-2000
10	CDMA Network Base Station Almanac (BSA) ASCII Format Specification 80-V2275-3 Rev. D
11	Qualcomm BSA Deployment Guide for CDMA Networks
12	TIA/EIA-637-A, Short Message Service
13	gpsOne™ Mobile Station Sensor Interface Application TCP/IP Wrapper Interface Specification CL93-V2246-1 Rev. B September 24, 2002
14	TIA/EIA/IS-841, TIA/EIA-41-D Based Network Enhancements for MDN Based Message Centers
15	TIA/EIA-41D, Cellular Radio Telecommunications Intersystem Operations
16	TIA/EIA/IS-881 Location Services Authentication/Privacy/Security and Enhancements
17	TIA/EIA/IS-801, Position Determination Service Standard for Dual Mode Spread Spectrum Systems

2.1.1 High Level Network Diagram

The following network diagram shows the network interfaces between TCS XLS and METROPCS.



2.2 Scope of XLS Service

This section outlines the responsibilities of TCS and METROPCS.

2.2.1 TCS Responsibilities

- a) Hosting XLS in TCS data center in Seattle, WA with agreed upon transaction capacity
- b) Provide and responsible for all equipment and VPN associated with IP network connectivity between TCS XLS and METROPCS as defined in the associated ICDs.
- c) Provide PDE functionalities based on the attached Interface Control Documents (ICDs):
 - i. Location Services ICD
 - ii. Handset ICD
 - iii. LDR ICD
- d) Implementation of XLS (see section 2.2 for detail)
- e) Execution of the Acceptance Test Plan (ATP) for XLS services.
- f) Joint testing of first commercial LBS application with METROPCS.
- g) Each location request generates a Location Detailed Record ("LDR"). These LDRs are also available to METROPCS for download for reporting and billing purposes.
- h) TCS will provide reports listed in Section 3 Deliverables
- i) TCS will provide third party Snaptrack tools (unsupported by both TCS and Snaptrack) for BSA support.
- j) TCS will provide support configuration of different TCS LBS Destination Port numbers allocation for partner applications to enable billing/reporting/location transaction records. TCS will specify the allowable port ranges at the time of deployment.
- k) Load BSA data provided by METROPCS into the XLS systems.
- l) TCS will provide the following data as part of Xypoint Location Service.
 - i. Location Detail Record Log files
 - ii. PDE binary log files

2.2.2 **METROPCS Responsibilities¹**

- a) Provide and responsible for all equipment and VPN associated with IP network connectivity between METROPCS and TCS XLS as defined in the associated ICDs.
- b) Comply with all TCS ICDs
- c) Provide User Plane V.1 compliant handsets for acceptance testing phase as defined in the Handset ICD which comply with the IS-801 standards and are capable of supporting the Mobile Originated call flow in the Location Services ICD.
- d) Ensure that all XLS interfaces as defined in the ICDs, customer resources and items specified in the deployment guide will be available at the time of the XLS deployment
- e) Provide complete and accurate CDMA IS-801 BSA data that has been created, validated and calibrated to the XLS using TCS's procedure or tool as defined by TCS.
- f) Maintain and Provide BSA as changes are made to METROPCS's network and BSA optimization occurs
- g) Test and certify handsets, devices and applications prior to introducing them to the production system ensuring that they comply with the MS Based behavior as follows:
 - I. To ensure that location applications will not negatively impact the production environment, METROPCS and TCS will mutually agree to a validation procedure that can be used to verify that applications conform to a MS-based profile. It is understood that an MS-based profile uses an MS-assisted request to gather satellite data or to complete a cell-id / hybrid fix where appropriate. METROPCS agrees to provide the test result to TCS prior to the application introduction into production. This assists TCS to monitor the system for capacity and stability following new application launches

Conforming MS-based applications are defined as applications that acquire a precise initial location fix from the PDE and then store the ephemeris satellite data in the mobile and use the ephemeris data for subsequent calculations until the ephemeris data is no longer valid. For MS based applications, the downloaded ephemeris data is typically valid for 1 to 2 hours before new ephemeris data is needed from the PDE. MS-based applications may fall back to MS-assisted operation under certain conditions defined in the gpsOne chipset that are beyond the control of METROPCS. METROPCS will make reasonable efforts to ensure that the application returns to MS-based operation as soon as possible.

- h) Notify TCS of launch dates for new handsets and applications prior to production launch.
- i) Provide resources to support XLS deployment including but limited to network integration, system testing, call flow testing and ATP execution.

¹ Also includes METROPCS vendors and sub contractors other than TCS.

- j) Maintain an agreement with a BREW service provider for application downloads to the handsets.

2.2.3 **Assumptions**

- a) The TCS XYPOINT Location Service (XLS) capacity is engineered based on the applicable agreement for Location Based Services between TCS and METROPCS.
- b) It is assumed that all XLS interfaces as defined in the ICDs, customer resources, CDMA IS-801 compliant Mobile Originated compliant handset(s), User Plane IS-801 Mobile Originated compliant application(s), and BSA data will be available at the time of XLS Service implementation.
- c) It is assumed that if METROPCS provides accurate and complete CDMA IS-801 compliant BSA data according to the Qualcomm CDMA Network Base Station Almanac (BSA) ASCII Format Specification 80-V2275-3 Rev.data, there will be no additional charges.

3. **Deliverables**

The table below describes the deliverables of the XLS Service implementation. All deliverables will be provided in TCS standard format.

Deliverable	Description of Deliverable
Interface Control Documents (ICDs)	ICDs define the interface, messages, parameters and procedures how the XLS service will interface with METROPCS network. ICDs will be discussed at the time of the Design Workshop.
Agreement and Purchase Order	The XLS service implementation will commence after the Agreement and Purchase Order has been reviewed and signed off by METROPCS.
Implementation Plan	The XLS Service Implementation plan is the comprehensive set of activities mapped against timeframe. In addition to activities and milestones, the plan will also identify activity inter-dependence and associated roles.
Issues Log	The Issues log is the list of all issues identified during the implementation. It will also provide related issue severity, owners, resolutions and timeframes.
Weekly Status Reports	During the implementation, a weekly status report will be provided to METROPCS.
Change (Scope) Management Logs	The change management log is a list of all requested changes to the established scope of the project. Each change request will include administrative information agreed to at the beginning of the project.
Test Plan	The Acceptance Test Plan will be built to ensure the quality of the XLS Service within the METROPCS network.
Standard Operating Procedures (SOP)	TCS will deliver a SOP to METROPCS. This document will outline common procedures related to the XLS service.
ATP Results Signoff	TCS will deliver a summary of execution of the ATP and resolution of any outstanding issues. This is the basis for system acceptance.

3.1 Report Deliverables

Report description *	Report Availability
Unique users by port; this report will also include the total unique users across all ports	Available for Successful transactions
Transaction count by port; this report will also include the total number of transactions across all ports	Available for Successful transactions
BSA look up failures	Available
Total number of MS-Assisted and MS-Based transactions per PDE and per application	Will be made optionally available to METROPCS when released for general availability
Peak number of PDE sessions used per month	Will be made optionally available to METROPCS when released for general availability

* Report examples available upon request

3.2 XLS Service SLA, Penalties, and Remedies

After the date on which METROPCS launches commercial service utilizing the first location based services application which requires the TCS' Xypoint Location Service, TCS shall commit to a system availability of the TCS' Xypoint Location Service of 99.90% or greater. Failure to meet this level of availability due exclusively to the actions of TCS or within the TCS area of control for any calendar month shall result in a penalty schedule as follows:

- a) 1% of the invoice value for the given calendar month shall be deducted for every accumulated hour of Severity I impairments, and
- b) 0.5% of the invoice value for the given calendar month shall be deducted for every accumulated hour of Severity II impairments.
- c) If service levels fall below 95% for 2 out of the prior 4 calendar months or 90% in any single calendar month, then METROPCS reserves the right to terminate this Agreement.
- d) If any Services fail to conform to the warranty set forth of the main Network Services Agreement/SLA, and METROPCS notifies TCS of such nonconformance in writing within thirty (30) days after the date of such nonconformance, TCS shall use good faith efforts to correct such nonconformance as soon as commercially possible. If TCS fails to correct such nonconformance within thirty (30) days of this notification, METROPCS may terminate the Agreement upon written notification to TCS.

DEFINITIONS

(i) **"Available"** means any time during which the TCS' Xypoint Location Service is not experiencing an Excused Outage.

(ii) **"Excused Impairment"** means a period of time during which the TCS' Xypoint Location Service is experiencing an impairment, solely to the extent such impairment is caused by: (i) Scheduled Maintenance; (ii) Communications disruptions in METROPCS's internal network or METROPCS's Internet connectivity through METROPCS's own Internet Service Provider (iii) Faults within third-party LBS Application Providers or other third party software or systems that are not part of the TCS' Xypoint Location Service and that are not caused by TCS; (iv) General Internet

outages affecting multiple third parties; or (v) earthquakes, fires, floods and other natural catastrophes or extraordinary government actions.

(iii) **"Service Availability Level"** means a measurement of TCS' Xypoint Location Service Availability calculated as follows:

$$(TNM - AMO) / TNM$$

Where TNM = total number of minutes in a month the TCS' Xypoint Location Service was Available, and AMO = total number of minutes of Impairment in such month, with the result expressed as a percentage.

(iv) **"Scheduled Maintenance"** means any preventative or restorative maintenance (e.g., updating routing/IP/DNS configurations) performed on the TCS' Xypoint Location Service or related network and components that causes the TCS' Xypoint Location Service or any portion thereof to be unavailable to Subscribers, which maintenance is performed within a 3 hour window (12:00am – 3:00am Pacific Time) at a time and date, in each instance, where METROPCS is notified via email by TCS per our Standard Operating Procedures (two (2) weeks for major releases, twenty-four (24) hours for general maintenance). Scheduled Maintenance does not include emergency unplanned maintenance performed as a result of an Outage. TCS will provide METROPCS reasonable details regarding what maintenance is being performed during each instance of Scheduled Maintenance.

(v) **"Impairment"** means any failure in the TCS' Xypoint Location Service (exclusive of the "Excused Impairment" in paragraph ii) which results in an inability of Subscribers to access of the TCS' Xypoint Location Service, including (i) the inability to access any TCS element necessary for an IS-801 session to operate properly, (ii) any failure that causes the TCS' Xypoint Location Service to fail to perform in accordance with the response times and other similar metrics set forth in the Specifications, or (iii) any SIL 1 Error or SIL 2 Error (as defined in Table 2-1 of Exhibit C Standard Operating Procedures for Wireless Carriers).

(vi) **"Error"** means an error in the TCS' Xypoint Location Service, including the Software therein, which significantly degrades the performance of the service or causes the service to fail to conform to Exhibit A CDMA XLS Service Description, which error may be designated as a SIL 1, SIL 2, or SIL 3 in accordance with section 2.1 of Exhibit C Standard Operating Procedures for Wireless Carriers).

3.3 XLS Service Implementation

The following resources are allocated to execute the XLS Service implementation. The table below describes resource roles and responsibilities.

Role	Description of Responsibilities
METROPCS Program Manager	<p>The Program Manager will:</p> <ul style="list-style-type: none"> - Be the primary point of contact to TCS - Facilitate effective communication among TCS, METROPCS and its vendors - Manage internal METROPCS resources and other vendors

	<p>related to the XLS service implementation</p> <ul style="list-style-type: none"> - Ensure all deliverables set forth in this SOW and ICDs are completed promptly - Resolve critical implementation issues related to METROPCS or its vendors
TCS Implementation Manager	<p>The Implementation Manager will:</p> <ul style="list-style-type: none"> - Be the primary point of contact during initial service roll-out - Own implementation strategy and plans related to the XLS Service. - TCS is not responsible for BSA Calibration or BSA data integrity. - Manage all activities directly related to the implementation of the XLS Service. - Handle resource planning. - Ensure effective communications (internal/external to team). - Resolve critical implementation issues. <p>Responsible for Project success and METROPCS satisfaction.</p>

3.4 TCS Implementation Team Activity

Phase	Task	Description	Responsibility
Kick Off	Customer Kick Off	Facilitate the kick off meeting with all location service stakeholders to outline the following: <ul style="list-style-type: none"> • Project Overview • Timeline • Change Control • Status Updates 	TCS, METROPCS
	Review the scope of this SOW	Ensure the team is focused on the agreed upon scope & deliverables of the project.	TCS, METROPCS
	Document any out of scope work	Document out of scope requirements for the change control process.	TCS
Planning	Develop Project Plan	This activity consists of the creation and validation of the overall project plan down to the task level with inter-dependencies and key milestones.	TCS
	Identify Roles and Responsibilities	Review roles and responsibilities for success and assign resources.	TCS, METROPCS

Phase	Task	Description	Responsibility
	Create Tracking Documents	This activity involves the development of issue and decision logs for the implementation.	TCS
	Forward Test Plan to METROPCS	Forward the Acceptance Test Plan for review.	TCS
	Sign Off on Test Plan	Sign off on the Acceptance Test Plan.	METROPCS
	Plan Network Connectivity	Identify, Plan, Engineer all required network connectivity	TCS, METROPCS
Execution	Network Connectivity		
	Configure & verify XLS TCS data center	Set configuration parameters and verify correctness	TCS
	Load BSA data to the XLS	Load radio network specific data provided by METROPCS	TCS
Testing	Verify Network Connections	Perform individual circuit tests for all required network connections	TCS, METROPCS
	Integration Testing	Execute agreed upon ATPs. Detailed acceptance criteria will be outlined in contract orders.	TCS, METROPCS

3.4.1 **System Integration Issues**

The project plan documents the time and resources required during the integration of the XLS with the METROPCS network. The following items represent areas of Integration Support/Service provided by the TCS Implementation Team:

- Connectivity: The TCS Implementation team will work with the METROPCS implementation team to identify and work toward resolution of any IP network element connectivity issues.
- Configuration: The TCS Implementation team will work with the METROPCS implementation team assuring accurate and complete provisioning of the XLS.
- Messaging: The TCS Implementation team will work with the METROPCS implementation team assuring valid messaging format and

transport protocols are employed for a successful XLS interface integration.

- Data Exchange: The TCS Implementation team will work with METROPCS to establish a means of data exchange.

4. Service Acceptance

The TCS Deployment Team will provide a suite of Acceptance Test Cases for review by METROPCS.

Once TCS and METROPCS have mutually agreed upon the Acceptance Test Plan ("ATP"), METROPCS will provide written approval of the ATP within five (5) business days. Once the Test Case Suite is agreed upon, TCS will execute the Test Plan as part of the formal Service Acceptance Phase of the XLS Deployment in the Dallas market under the supervision of Corporate Engineering.

After submission of the results and approval form by TCS, METROPCS will have ten (10) business days (the "Acceptance Period") to sign the approval form, indicating its acceptance or rejection. If METROPCS does not accept the service, METROPCS must notify TCS in writing of the rejection within the Acceptance Period. A detailed written explanation must accompany the rejection notice. TCS will then have ten (10) business days to address and correct the deficiencies, after which TCS will resubmit the approval form and a new Acceptance Period will be initiated, during which METROPCS will again be required to sign the approval form to indicate its acceptance or rejection. If no response is received within the initial Acceptance Period, TCS will consider the service accepted by METROPCS.

5. Change Management Process

Either TCS or METROPCS may propose a change in the scope of services offered. Any change in scope must be documented and agreed upon using a METROPCS Contract Order. TCS will have no responsibility for delivered new services and functionality until the relevant Contract Order is executed and signed by both parties.

EXHIBIT

B

2. Plaintiff LBS is a limited liability company organized and existing under the laws of the State of Delaware with its principal place of business located at 500 Newport Center Drive, Newport Beach, California.

3. Defendant MetroPCS Communications, Inc. is a Delaware corporation with its principal place of business at 2250 Lakeside Boulevard, Richardson, Texas and can be served with process through its Chief Executive Officer, Roger D. Linqvist, 2250 Lakeside Boulevard, Richardson, Texas 75082. Defendant MetroPCS Wireless, Inc. is a subsidiary of MetroPCS Communications, Inc. and is a Delaware corporation with its principal place of business at 8144 Walnut Hill Ln., Suite 800, Dallas, Texas 75231. MetroPCS Wireless, Inc. can be served with process through its registered agent, Corporation Services Company, 701 Brazos, Suite 1050, Austin, Texas 78701. Defendants MetroPCS Communications, Inc. and MetroPCS Wireless, Inc. are referred to collectively herein as "MetroPCS."

4. Defendant Centennial Communications Corp. ("Centennial") is a Delaware corporation with its principal place of business at 3349 Route 138, Wall, New Jersey 07719. Centennial can be served with process through its registered agent, Corporation Service Company, 2711 Centerville Road, Suite 400, Wilmington, Delaware 19808.

5. Defendant Leap Wireless International, Inc. ("Leap Wireless") is a Delaware corporation with its principal place of business at 10307 Pacific Center Court, San Diego, California 92121. Leap Wireless can be served with process through its registered agent, Corporation Service Company dba CSC – Lawyers Incorporating Service Company, 2730 Gateway Oaks Drive, Suite 100, Sacramento, California 95833.

6. Defendant Cricket Communications, Inc. ("Cricket") is a Delaware corporation with its principal place of business at 10307 Pacific Center Court, San Diego, California 92121.

Cricket can be served with process through its registered agent, Corporation Service Company dba CSC – Lawyers Incorporating Service Company, 701 Brazos, Suite 1050, Austin, Texas 78701. Defendant Cricket is a subsidiary of Defendant Leap Wireless.

7. Defendant ETEX Telephone Cooperative Inc. is a Texas corporation with its principal place of business at 801 Highway 155 North, P.O. Box 130, Gilmer, Texas 75644. Defendant ETEX Communications, L.P. is a subsidiary of ETEX Telephone Cooperative Inc. and maintains its principal place of business at 801 Highway 155 North, P.O. Box 130, Gilmer, Texas 75644. Defendants ETEX Telephone Cooperative Inc. and ETEX Communications, L.P. (collectively, “ETEX”) can each be served with process through its registered agent, Danny N. Kellar, 801 Highway 155 North, P.O. Box 130, Gilmer, Texas 75644.

JURISDICTION AND VENUE

8. This is an action for infringement of United States patents arising under 35 U.S.C. §§ 271, 281, and 284-285, among others. This Court has subject matter jurisdiction of the action under Title 28 U.S.C. §1331 and §1338(a).

9. The Court has personal jurisdiction over each Defendant, and venue is proper pursuant to 28 U.S.C. §§ 1391 and 1400(b). Each Defendant has substantial contacts with the forum as a result of pervasive business activities conducted within the State of Texas and within this District, including but not limited to: (i) the marketing, sale and distribution of cellular telephones; (ii) the marketing and sale of services for cellular telephone communications; (iii) the ownership and operation of stores where Defendants sell their respective products and services; and (iv) the operation of cellular telephone networks (including the towers and electronic equipment attendant thereto).

10. Each Defendant has committed and continues to commit acts of patent infringement, directly and/or through agents and intermediaries, by shipping, distributing, importing, offering for sale, and/or selling certain infringing products, services, and systems in Texas and, particularly, the Eastern District of Texas. Specifically, each Defendant operates an infringing cellular telephone network in this District. Each Defendant has purposefully and voluntarily placed one or more of its infringing products and services into the stream of commerce with the expectation that they will be purchased by consumers in this District, which products and services have been, and continue to be, purchased by consumers in this District. And each Defendant provides support for their infringing products and services to their respective customers in the District. Lastly, at least Defendants Leap Wireless and ETEX have availed themselves of this forum by bringing and litigating lawsuits.

BACKGROUND

11. On August 31, 1999, U.S. Patent No. 5,946,611 (“the ‘611 patent”) was issued for a “Cellular Telephone System That Uses Position of a Mobile Unit to Make Call Management Decisions.” A true and correct copy of the ‘611 patent is attached hereto as Exhibit “A” and made a part hereof. On January 25, 2005, United States Patent No. 6,847,822 (“the ‘822 patent”) was issued for a “Cellular Telephone System That Uses Position of a Mobile Unit to Make Call Management Decisions.” A true and correct copy of the ‘822 patent is attached hereto as Exhibit “B” and made a part hereof. On October 30, 2007, United States Patent No. 7,289,763 (“the ‘763 patent”) was issued for a “Cellular Telephone System That Uses Position of a Mobile Unit to Make Call Management Decisions.” A true and correct copy of the ‘763 patent is attached hereto as Exhibit “C” and made a part hereof. The ‘611, ‘822, and ‘763 patents are collectively referred to as the “Dennison patents.”

12. Plaintiff Emsat is the assignee of the Dennison patents and owns all rights, title, and interest in and to the Dennison patents. Plaintiff LBS is the exclusive licensee of the Dennison patents and possesses all rights of recovery under the Dennison patents, including the right to prosecute this action and to collect damages for all relevant times.

13. The Dennison patents relate to systems and methods for combining certain features of cellular, or “wireless,” telephone systems with location-finding technology to create location-aware networks that can determine the exact geographic locations of telephones and, in turn, use that information to improve network operations. In particular, the Dennison patents allow for increased accuracy in determining the location of a mobile phone for the purpose of transmitting location information to nearby emergency call centers, known as “Public Safety Answering Points” (“PSAPs”).

14. In 1996, the Federal Communications Commission (“FCC”) established the Enhanced 911 (“E911”) program. Under “Phase 2” of the E911 program, all cellular telephone service providers in the United States must be capable of providing the location of cellular telephones to PSAPs with a specified accuracy for a specified percentage of wireless calls.

15. The methods and systems involved in deploying a mobile E911 system, as described above, are substantially similar to those required to deploy so-called “commercial” location-based services to cell phone subscribers. In fact, commentators have asserted that the FCC-required development of mobile E911 systems allowed the wireless carriers, such as Defendants, to develop and deploy commercial location-based services. These location-based services permit the cell phone user to use his or her cell phone as a navigation device, to locate nearby products and services, and to find friends, among other things. The Defendants often charge their customers a fee for providing such services.

16. Upon information and belief, Defendants, directly or through intermediaries, make, have made, use, sell, and/or offer for sale the above-described location-based services and systems for cellular telephones. These services and systems infringe the Dennison patents.

COUNT I – INFRINGEMENT OF THE ‘611 PATENT

17. Plaintiffs incorporate each of the allegations in paragraphs 1 through 16 as if fully set forth herein.

18. Upon information and belief, Defendants have infringed and are continuing to infringe, contribute to the infringement of, and/or induce the infringement of, one or more of the claims of the ‘611 patent (namely, claims 1-5) without Plaintiffs’ consent or authorization. Such acts of infringement include Defendants’ offer for sale, sale, use, and/or inducement of the use, offer for sale, and sale of mobile E911 services.

19. Plaintiffs have been damaged as a result of Defendants’ infringing conduct. Defendants are, thus, liable to Plaintiffs in an amount that adequately compensates them for Defendants’ infringements, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

COUNT II – INFRINGEMENT OF THE ‘822 PATENT

20. Plaintiffs incorporate each of the allegations in paragraphs 1 through 16 as if fully set forth herein.

21. Upon information and belief, Defendants have infringed and are continuing to infringe, contribute to the infringement of, and/or induce the infringement of, one or more of the claims of the ‘822 patent (including, at least, claims 24 and 31) without Plaintiffs’ consent or authorization. Such acts of infringement include Defendants’ offer for sale, sale, use, and/or inducement of the use, offer for sale, and sale of mobile E911 services and, at least with respect

to Defendants MetroPCS, Centennial, and ETEX, their offer for sale, sale, use, and/or inducement of the use, offer for sale, and sale of commercial location-based services.

22. Plaintiffs have been damaged as a result of Defendants' infringing conduct. Defendants are, thus, liable to Plaintiffs in an amount that adequately compensates them for Defendants' infringements, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

COUNT III – INFRINGEMENT OF THE '763 PATENT

23. Plaintiffs incorporate each of the allegations in paragraphs 1 through 16 as if fully set forth herein.

24. Upon information and belief, Defendants have infringed and are continuing to infringe, contribute to the infringement of, and/or induce the infringement of, one or more of the claims of the '763 patent (including, at least, claims 1 and 23-32) without Plaintiffs' consent or authorization. Such acts of infringement include Defendants' offer for sale, sale, use, and/or inducement of the use, offer for sale, and sale of mobile E911 services and, at least with respect to Defendants MetroPCS, Centennial, and ETEX, their offer for sale, sale, use, and/or inducement of the use, offer for sale, and sale of commercial location-based services.

25. Plaintiffs have been damaged as a result of Defendants' infringing conduct. Defendants are, thus, liable to Plaintiffs in an amount that adequately compensates them for Defendants' infringements, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

NOTICE OF PUBLISHED PATENT APPLICATION

26. Plaintiffs incorporate each of the allegations in paragraphs 1 through 16 as if fully set forth herein.

27. U.S. patent Application Pub. No. US 2008/0014965 A1 (“the ‘965 Publication”) to Dennison, et al., entitled “Cellular Telephone System That Uses Position of a Mobile Unit to Make Call Management Decisions,” was published on January 17, 2008.

28. Upon information and belief, Defendants have infringed and continue to infringe, contribute to the infringement of, and/or induce the infringement of, one or more claims of the ‘965 Publication without Plaintiffs’ consent or authorization. Such acts of infringement include Defendants’ offer for sale, sale, use, and/or inducement of the use, offer for sale, and sale of mobile E911 services and, at least with respect to Defendants MetroPCS, Centennial, and ETEX, their offer for sale, sale, use, and/or inducement of the use, offer for sale, and sale of commercial location-based services.

29. Defendants are hereby provided actual notice of the ‘965 Publication and Plaintiffs’ provisional rights to a reasonable royalty from Defendants for the period of infringement beginning on the date of publication of the application for such patent and ending on the date the patent issues.

30. Once the ‘965 Publication issues as a patent, Plaintiffs will amend their pleadings to allege infringement of such patent and seek damages adequate to compensate them for the ongoing infringements and a reasonable royalty for the period of infringement prior to when such patent issued.

JURY DEMAND

31. Plaintiffs hereby request a trial by jury pursuant to Rule 38 of the Federal Rules of Civil Procedure.

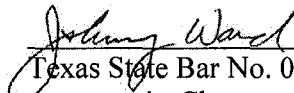
PRAYER FOR RELIEF

32. Plaintiffs request that the Court find in their favor and against Defendants, and that the Court grant Plaintiffs the following relief:

- a. Judgment that one or more claims of United States Patent No. 5,946,611, United States Patent No. 6,847,822, and/or United States Patent No. 7,289,763 have been infringed, either literally and/or under the doctrine of equivalents, by one or more Defendants and/or by others to whose infringement Defendants have contributed and/or by others whose infringements have been induced by Defendants;
- b. Judgment that Defendants account for and pay to Plaintiffs all damages to and costs incurred by them because of Defendants' infringing activities and other conduct complained of herein;
- c. That Plaintiffs be granted pre-judgment and post judgment interest on the damages caused by Defendants' infringing activities and other conduct complained of herein;
- d. That this Court declare this an exceptional case and award Plaintiffs their reasonable attorney's fees and costs in accordance with 35 U.S.C. § 285; and
- e. That Plaintiffs be granted such other and further relief as the Court may deem just and proper under the circumstances.

Dated: October 7, 2008.

Respectfully submitted,



Texas State Bar No. 00797142
Attorney-in-Charge
Brent N. Bumgardner
Texas State Bar No. 00795272
Barry J. Bumgardner
Texas State Bar No. 00793424
NELSON BUMGARDNER CASTO, P.C.
5601 Bridge Street, Suite 300
Fort Worth, Texas 76112
(817) 377-9111
(817) 377-3485 (fax)
enelson@nbclaw.net
bbumgardner@nbclaw.net

T. John Ward, Jr.
Texas State Bar No. 00794818
WARD & SMITH LAW FIRM
111 W. Tyler Street
Longview, Texas 75601
(903) 757-6400
(903) 757-2323 (fax)
jw@jwfirm.com

ATTORNEYS FOR PLAINTIFFS

EXHIBIT A

United States Patent [19]
Dennison et al.

[11] **Patent Number:** **5,946,611**
[45] **Date of Patent:** ***Aug. 31, 1999**

[54] **CELLULAR TELEPHONE SYSTEM THAT USES POSITION OF A MOBILE UNIT TO MAKE CALL MANAGEMENT DECISIONS**

[75] **Inventors:** **Everett Dennison; Edwin L. Nass,** both of Canfield, Ohio; **Timothy J. Duffy,** West Middlesex, Pa.; **Gregory T. Pauley,** Canfield, Ohio; **Scott L. Jones,** Sharon, Pa.; **Deborah J. Shale,** Poland, Ohio

[73] **Assignee:** **Sycord Limited Partnership,** Zephyr Cove, Nev.

[*] **Notice:** This patent is subject to a terminal disclaimer.

[21] **Appl. No.:** **08/670,281**

[22] **Filed:** **Jun. 21, 1996**

Related U.S. Application Data

[62] Division of application No. 08/555,884, Oct. 23, 1995, Pat. No. 5,546,445, which is a continuation of application No. 08/402,976, Mar. 13, 1995, abandoned, which is a continuation-in-part of application No. 08/057,833, May 7, 1993, abandoned, which is a continuation-in-part of application No. 07/813,494, Dec. 26, 1991, Pat. No. 5,235,633.

[51] **Int. Cl.⁶** **H04Q 7/20**

[52] **U.S. Cl.** **455/404; 455/445; 455/457; 455/521**

[58] **Field of Search** **455/456, 404, 455/12.1, 457, 521, 440, 445**

[56] **References Cited**

U.S. PATENT DOCUMENTS

3,662,267	5/1972	Reed	455/456
4,144,411	3/1979	Frenkiel	179/1
4,161,734	7/1979	Anderson	342/457
4,545,071	10/1985	Freeburg	455/456
4,700,374	10/1987	Bini	455/456
4,724,538	2/1988	Farrell	455/404
4,799,062	1/1989	Sanderford	342/457

4,812,852	3/1989	Bent	342/457
4,888,593	12/1989	Friedman	342/457
4,939,522	7/1990	Newstead	342/457
5,223,844	6/1993	Mansell	342/457
5,299,132	3/1994	Wortham	342/457
5,303,297	4/1994	Hillis	379/63
5,311,197	5/1994	Sorden	342/457
5,317,323	5/1994	Kennedy	342/457
5,319,374	6/1994	Desai	342/457
5,327,144	7/1994	Stilp	342/457
5,343,512	8/1994	Wang	342/457
5,365,450	11/1994	Schuchman	342/457
5,365,451	11/1994	Wang	342/457
5,365,516	11/1994	Jandrell	342/457
5,382,958	1/1995	FitzGeerald	342/457
5,390,124	2/1995	Kyrtsos	342/457
5,390,125	2/1995	Sennott	342/457
5,390,339	2/1995	Bruckert	342/457
5,418,537	5/1995	Bird	342/457
5,430,656	7/1995	Dekel	342/457
5,452,211	9/1995	Kyrtsos	342/457

Primary Examiner—Edward F. Urban

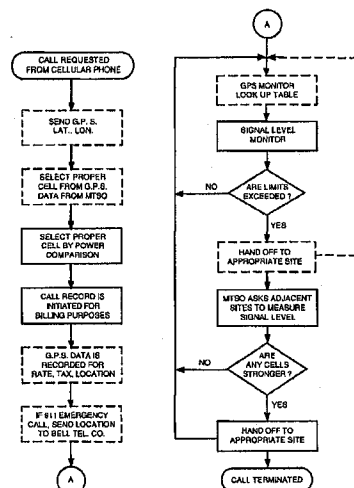
Assistant Examiner—Tilahun Gesesse

Attorney, Agent, or Firm—Terry M. Gernstein

[57] **ABSTRACT**

A cellular telephone system includes a plurality of cell sites and a mobile telephone switching office. Call management, including selection of a cell site most appropriate for a call associated with a mobile unit, are made based on the geographic location of the mobile unit as opposed to the strength of the signal associated with the call. The geographic location of the mobile unit is precisely determined using a NAVSTAR global positioning system, or its equivalent. Each mobile unit includes a GPS receiver that receives information from a geostationary satellite to determine the precise location of the mobile unit. This position information is relayed to the cell site initially managing the mobile unit, and the mobile unit is handed off to a cell site that is most appropriate for the call. Initial selection of an entrance cell site is made based on signal strength, but further call management decisions are made based on location of the mobile unit.

5 Claims, 14 Drawing Sheets



U.S. Patent

Aug. 31, 1999

Sheet 1 of 14

5,946,611

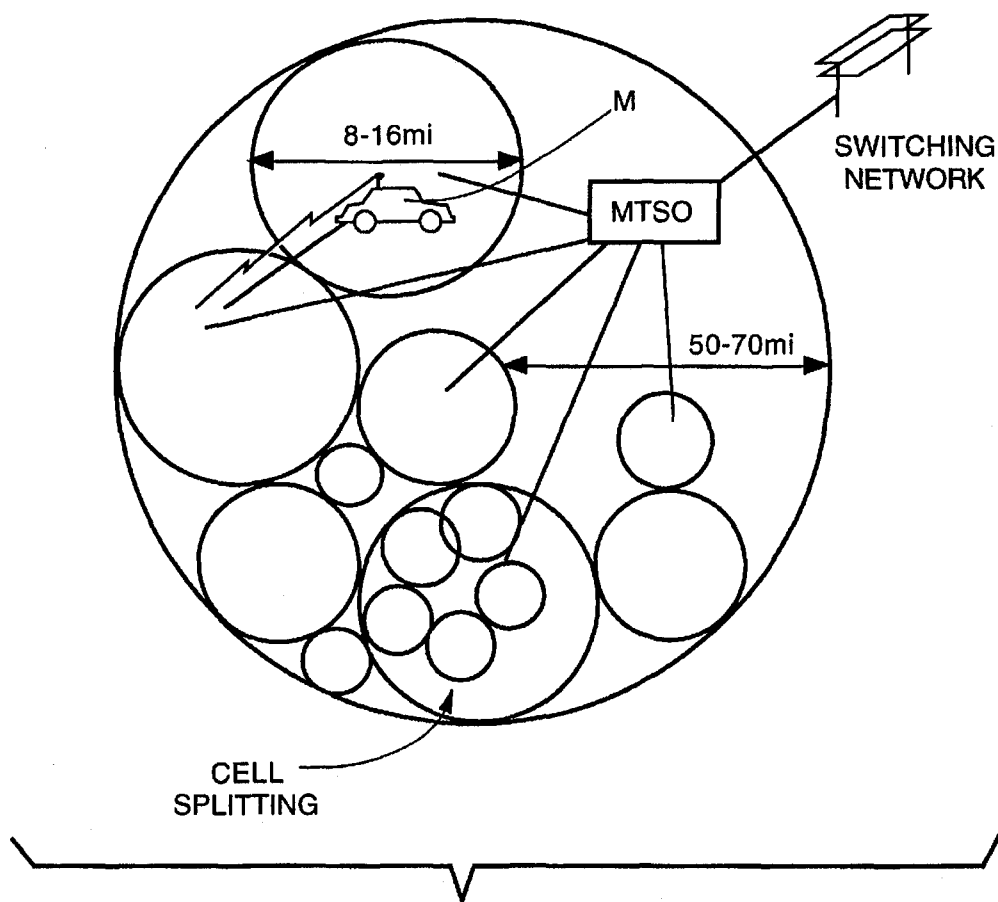


FIG. 1.

U.S. Patent

Aug. 31, 1999

Sheet 2 of 14

5,946,611

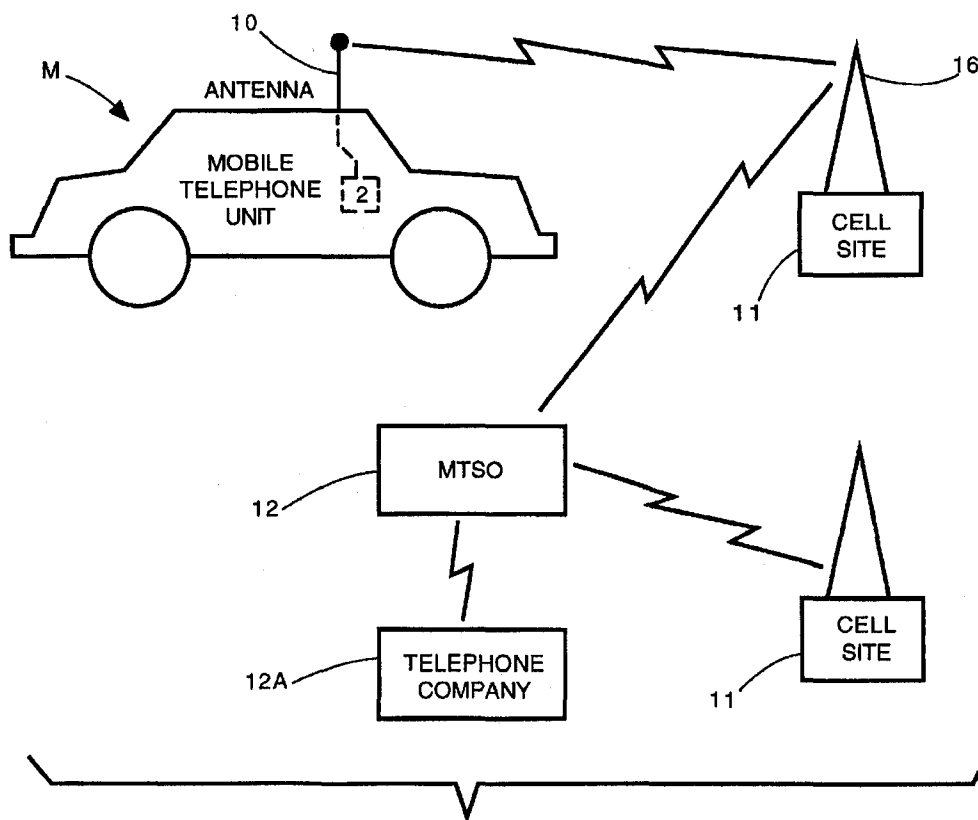


FIG. 2.
(PRIOR ART)

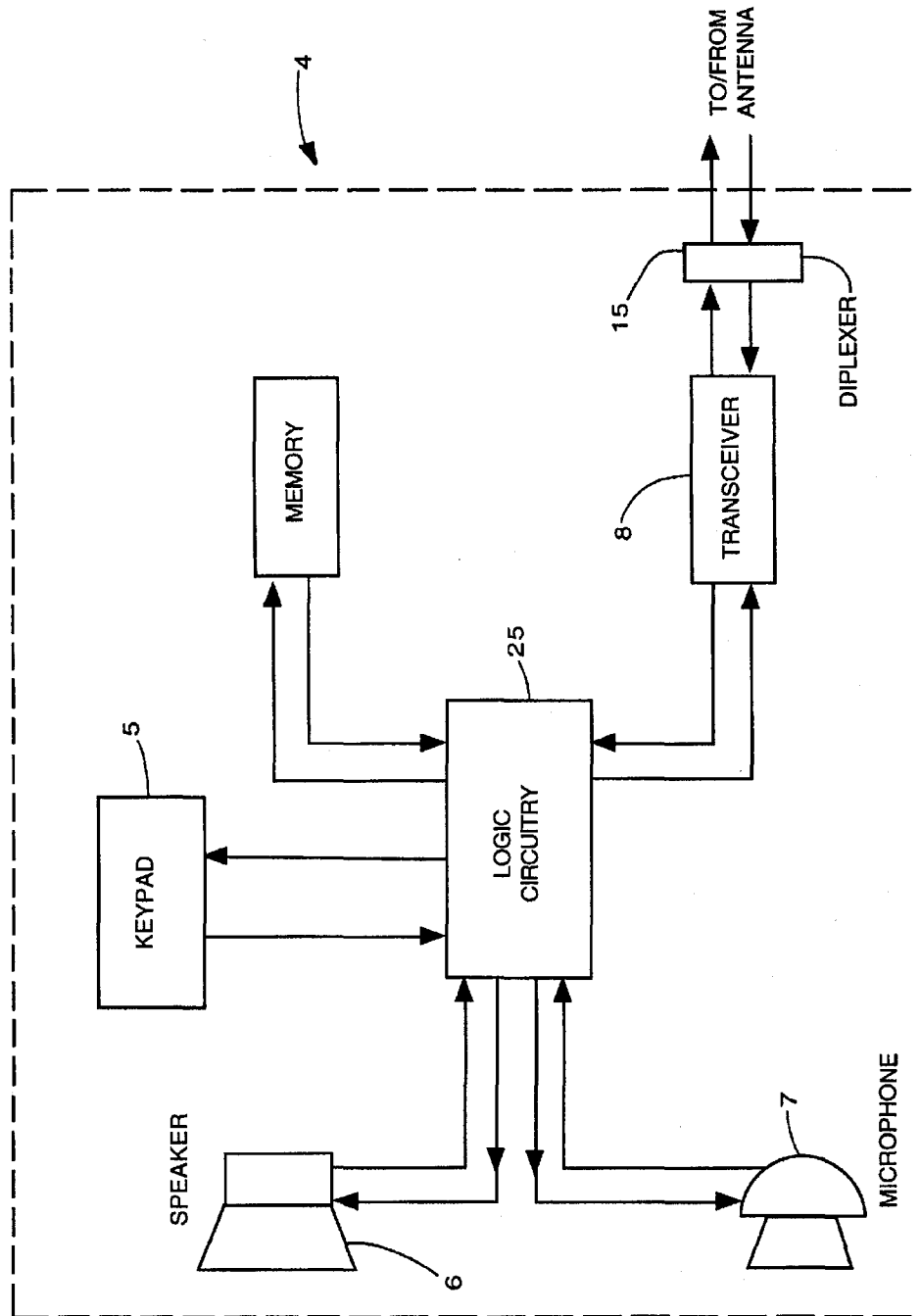


FIG. 3.
(PRIOR ART).

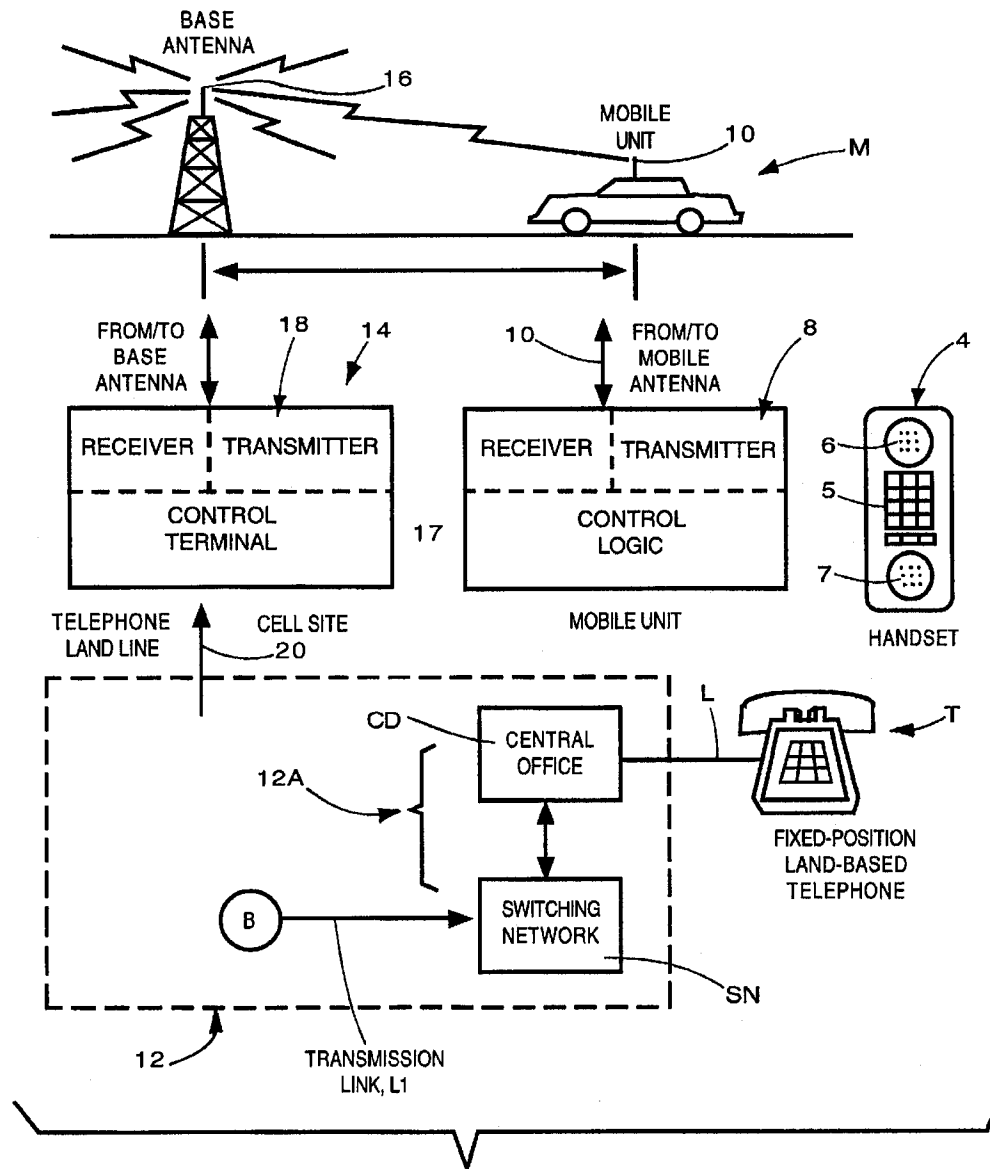
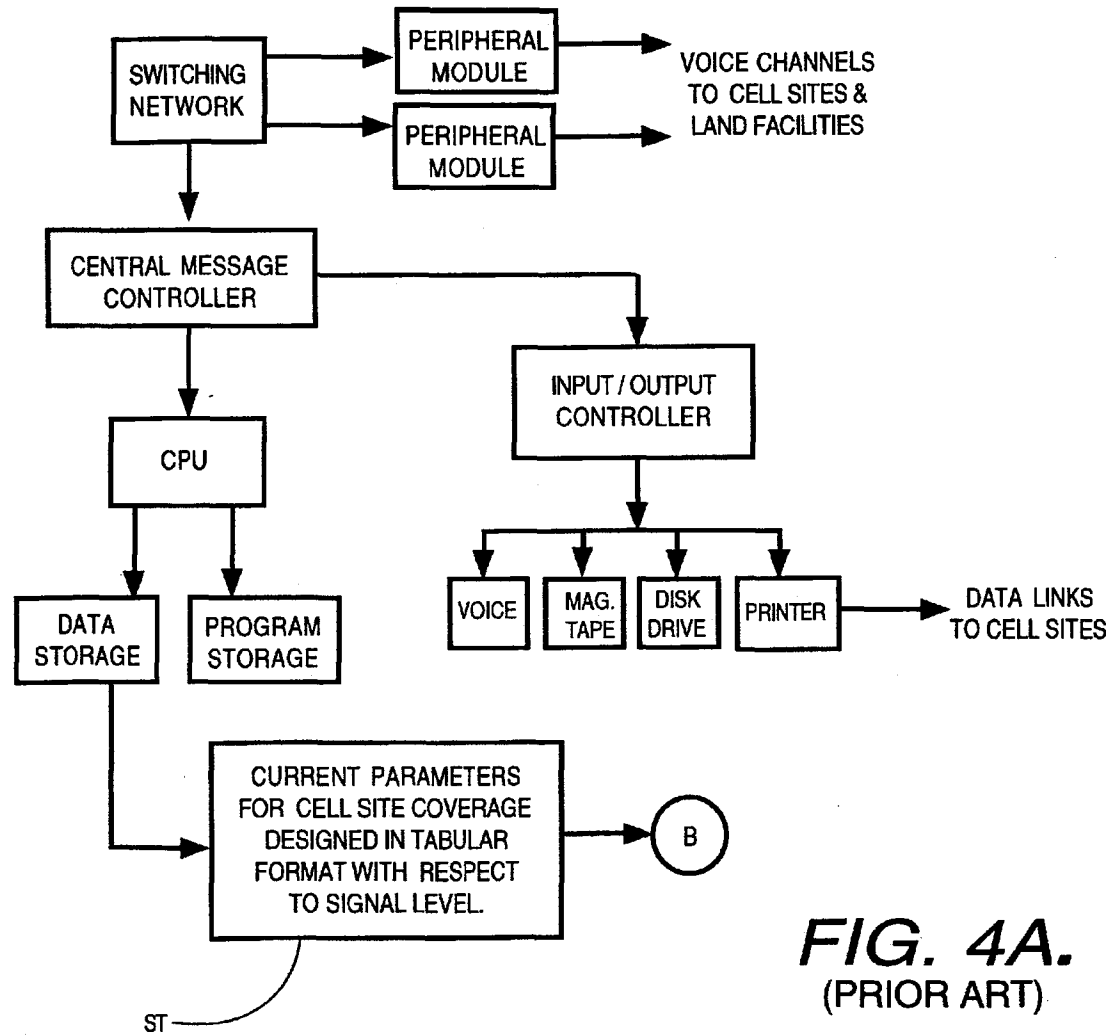


FIG. 4.
(PRIOR ART)



U.S. Patent

Aug. 31, 1999

Sheet 6 of 14

5,946,611

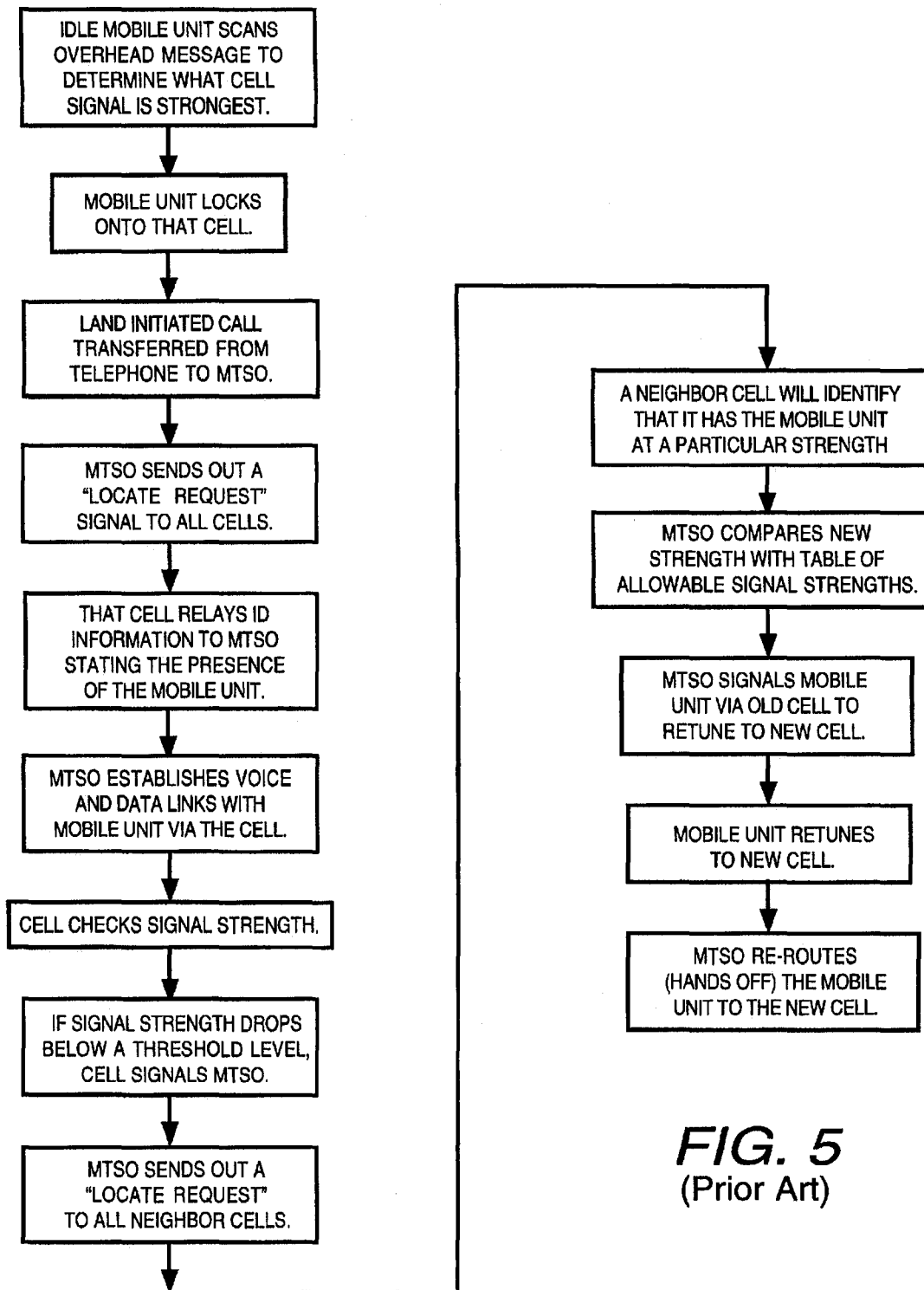


FIG. 5
(Prior Art)

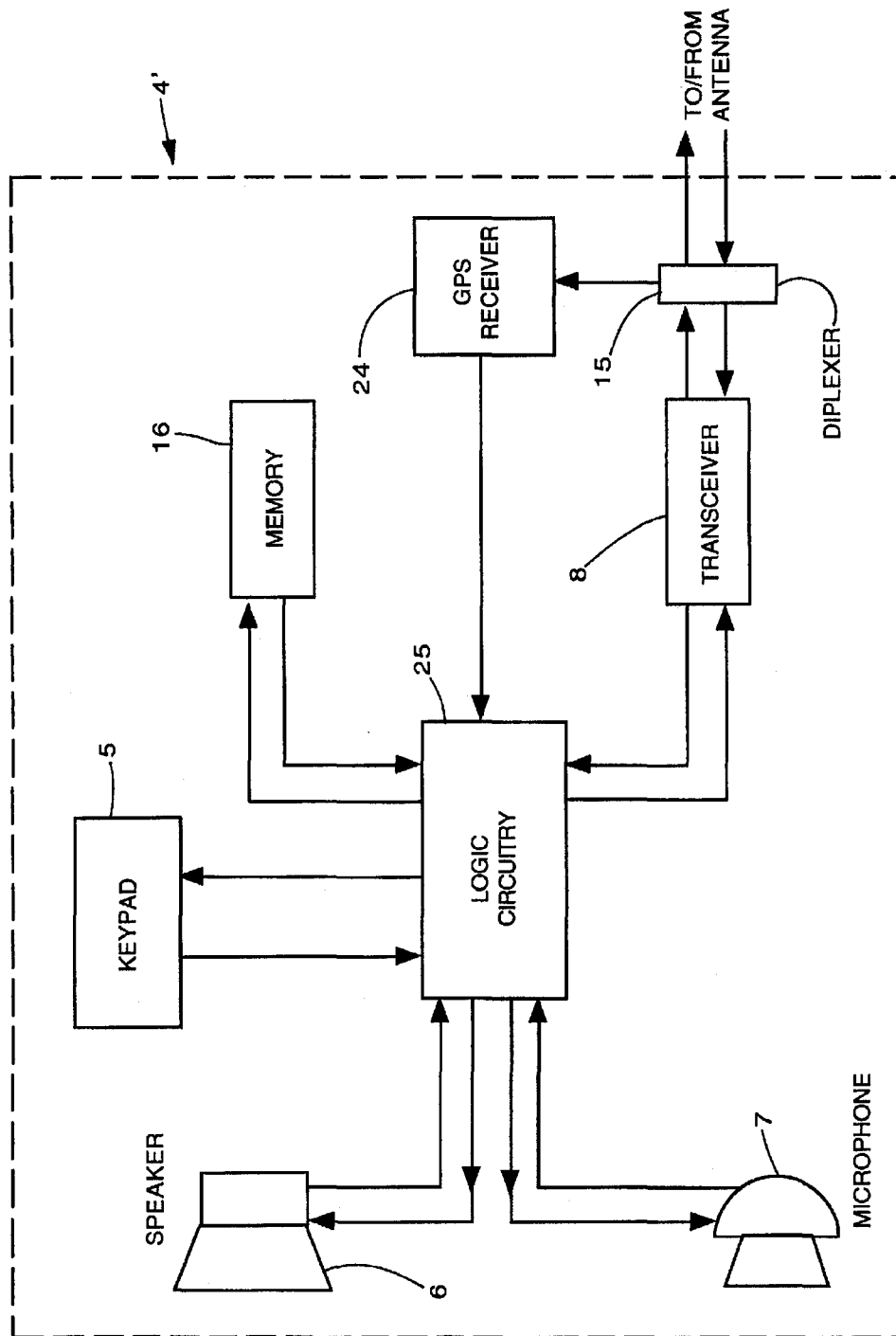


Fig. 6

U.S. Patent

Aug. 31, 1999

Sheet 8 of 14

5,946,611

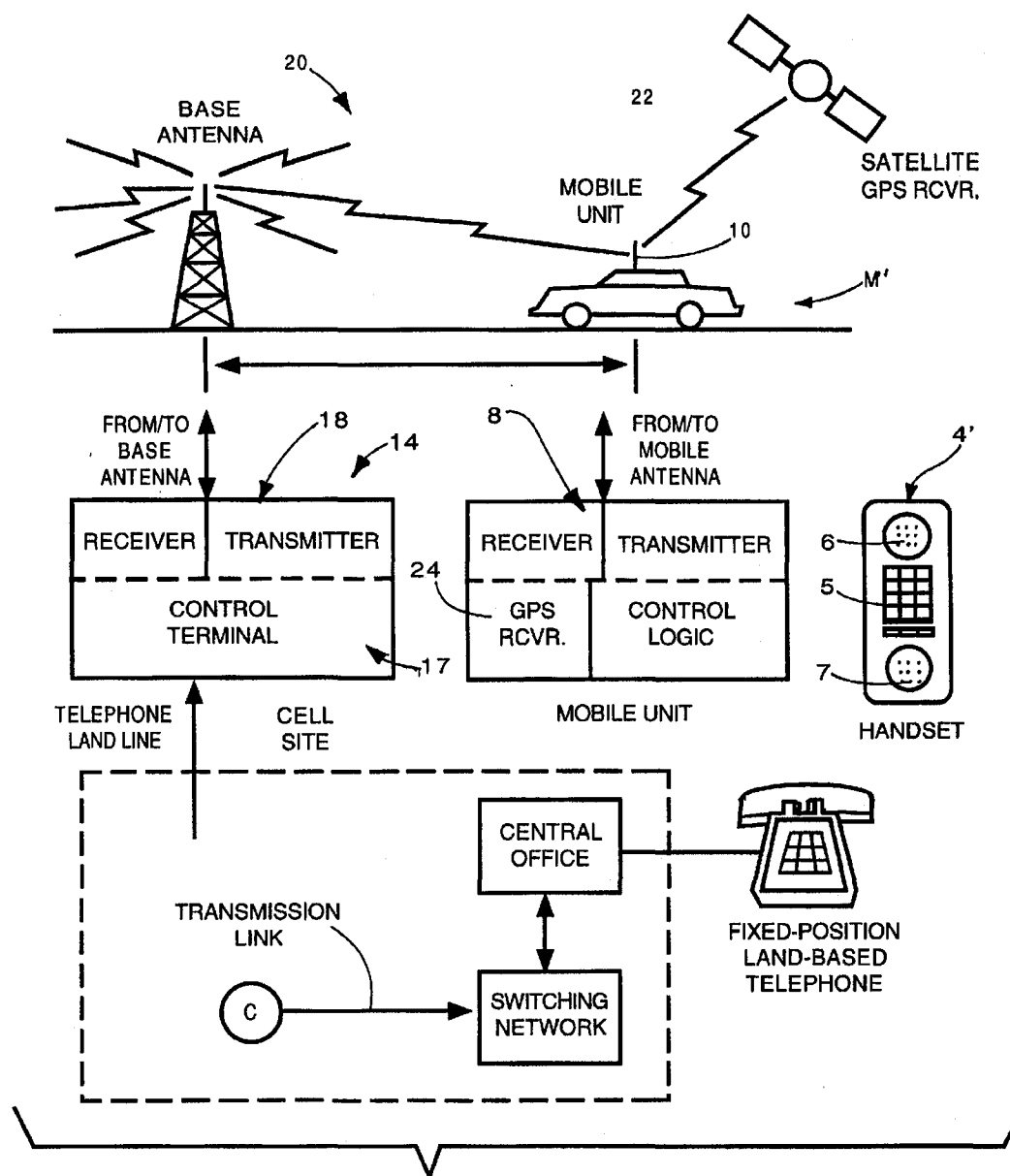


FIG. 7.

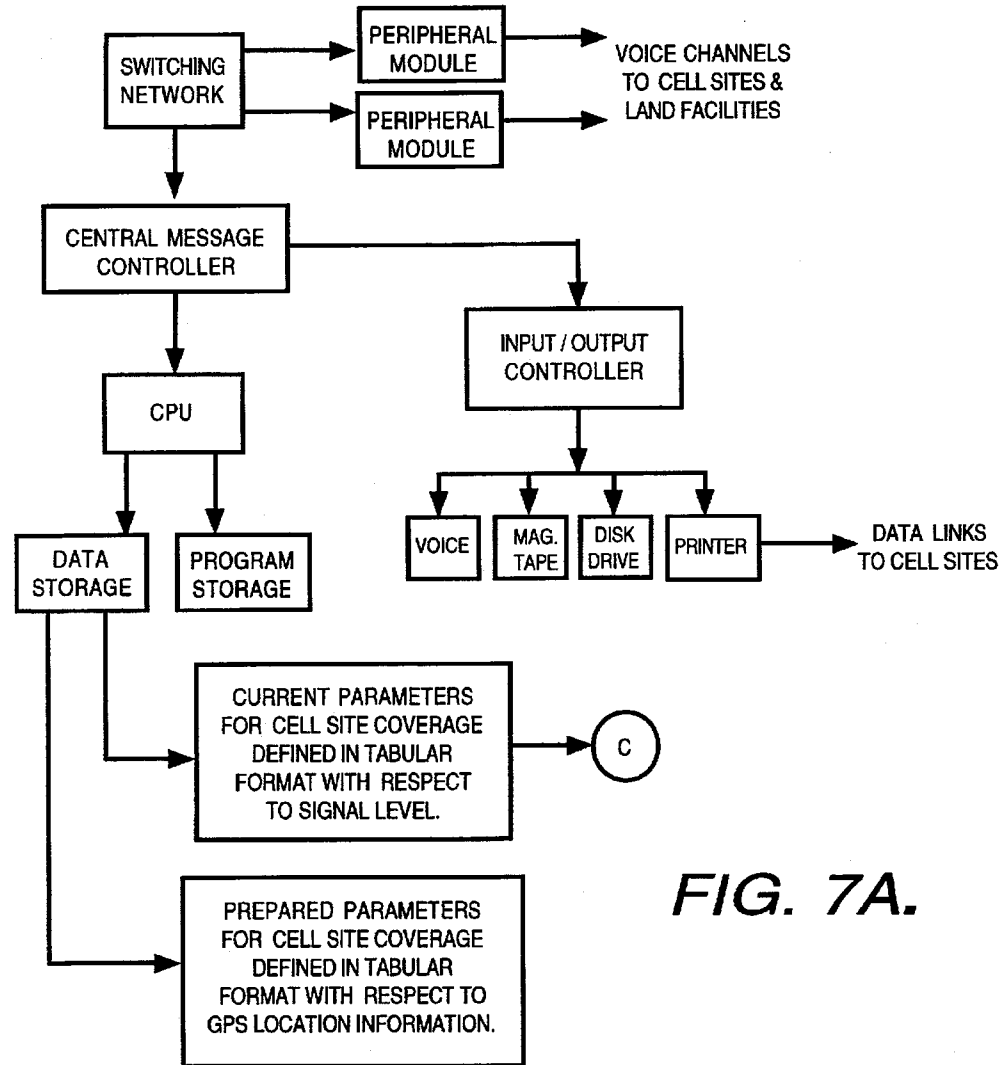


FIG. 7A.